Public Utilities

Volume XLV No. 1 January 5, 1950

THE WASHINGTON OUTLOOK FOR PUBLIC UTILITIES - 1950
By Francis X. Welch

« »

Is the FPC Encroaching on Local Gas Regulation?
By Henry F. Lippitt II

« »

How Atomic Power May Affect Electric Power Systems
By Ward F. Davidson

« »

Utility Outlook and Review

PUBLIC UTILITIES REPORTS, INC., PUBLISHERS

Use the Best Pressure Regulators You Can Get — that Means BARBER

A really *good* gas pressure regulator must provide many years of unfaltering service. Dependable operation is essential. Correct design, proper materials, and accurate workmanship must go into any regulator which does that kind of a job. For many years Barber Regulators have been rated among the finest available. They are not to be confused with ordinary *commercial* quality products—but are strictly high grade precision devices. Many thousands of them are in satisfactory daily service. They are *better-built* for reliable service, and responsive to 3/10 pressure drop. Rugged bodies, brass operating parts, phosphor bronze springs, and non-deteriorating diaphragms properly processed for domestic delivery pressures (for low pressure on LP gas, diaphragms are of Vulcan Proofing). The name Barber on any Regulator you sell or recommend is a substantial guarantee of satisfaction to your customer, backed by a responsible maker with a 30-year record of performance.

Certified by A. G. A. Testing Laboratory. Sizes ¼" up.

Attractive folders on this Regulator will be furnished free, at your request, for distribution to your trade. Write for catalog and price list on Barber Burner Units for Gas Appliances, Conversion Burners for Furnaces and Boilers, and Regulators.

THE BARBER GAS BURNER CO., 3704 Superior Avenue, Cleveland 14, Ohi

BARBER GAS PRESSURE REGULATORS

Barber Burners For Warm Air Furnaces, Steam and Hot Water Boilers and Gas Appliance

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

Editor • ELLSWORTH NICHOLS
Managing Editor • FRANCIS X. WELCH
Associate Editors • NEIL H. DUFFY
DONALD E. ROBINSON
FRANKLIN J. TOBEY, JR.
DONALD T. BURKE
Financial Editor • OWEN ELY
Assistant Editors • M. C. MCCARTHY
• M. L. WILLIAMS

HENRY C. SPURR
Editorial Consultant

Public Utilities FORTNIGHTLY

VOLUME XLV JANUARY 5, 1950 NUMBER 1

ARTICLES

The Washington Outlook for Public Utilities — 1950 ..... *Francis X. Welch* 3

Is the FPC Encroaching on Local Gas Regulation? ..... *Henry F. Lippitt II* 13

How Atomic Power May Affect Electric Power Systems ..... *Ward F. Davidson* 26

FEATURE SECTIONS

Financial News and Comment ..... *Owen Ely* 40

What Others Think 49

The March of Events 56

Progress of Regulation 61

Public Utilities Reports (*Selected Preprints of Cases*)..... 66

- Pages with the Editors 6
- Remarkable Remarks 12
- Utilities Almanack 1
- Frontispiece 2
- Industrial Progress 21
- Index to Advertisers 36

PUBLIC UTILITIES FORTNIGHTLY.. stands for Federal and state regulation of both privately owned and operated utilities and publicly owned and operated utilities, on a fair and nondiscriminatory basis; for nondiscriminatory administration of laws; for equitable and nondiscriminatory taxation; and, in general—for the perpetuation of the free enterprise system. It is an open forum for the free expression of opinion concerning public utility regulation and allied topics. It is supported by subscription and advertising revenue; it is not the mouthpiece of any group or faction; it is not under the editorial supervision of, nor does it bear the endorsement of, any organization or association. The editors do not assume responsibility for the opinions expressed by its contributors.

$1.00 a Copy
26 Issues a Year
Annual Subscription Price $15.00

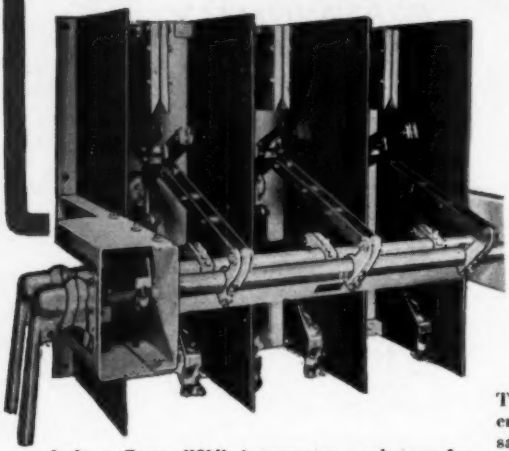
PUBLIC UTILITIES REPORTS, INC., PUBLISHERS

Publication Office.....CANDLER BLDG., BALTIMORE 2, MD.
Executive, Editorial, and Advertising Offices..MUNSEY BLDG., WASHINGTON 4, D. C.

Entered as second-class matter April 29, 1915, under the Act of March 3, 1879, at the Post Office at Baltimore, Md., Dec. 31, 1936. Copyrighted, 1950, by Public Utilities Reports, Inc. Printed in U. S. A.

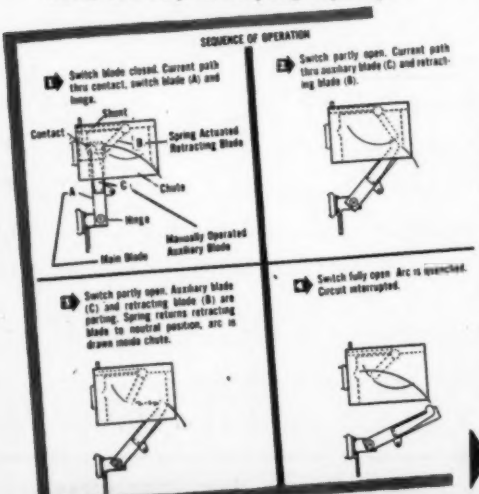
Address all communications concerning the FORTNIGHTLY *to the publishers at Munsey Building, Washington 4, D. C.*

FOR SAFETY'S SAKE USE "SL" INTERRUPTER SWITCHES



Indoor Type "SL" Interrupter and transfer selector switch 5000 volt 400-amp, continuous, 400-amp interrupting capacity.

The Delta-Star "SL" Interrupter Switch is a thoroughly tested and proved devise which serves the dual purpose of interrupter and disconnecting switch. Opening under load is accomplished without danger to operator or equipment.


SEQUENCE OF OPERATION
1 Switch blade closed. Current path thru contact, switch blade (A) and hinge.
2 Switch partly open. Current path thru auxiliary blade (C) and retracting blade (B).
3 Switch partly open. Auxiliary blade (C) and retracting blade (B) are parting. Spring returns retracting blade to neutral position, arc is drawn inside chute.
4 Switch fully open. Arc is quenched. Circuit interrupted.
Contact
Shunt
Spring Actuated Retracting Blade
Chute
Hinge
Manually Operated Auxiliary Blade
Main Blade

There are numerous applications in system operation for disconnecting switches capable of safely opening high-voltage currents under moderate load. Among these applications are (1) disconnecting of individual transformers from primary feeders (2) sectionalizing loop circuits (3) isolating capacitors (4) interrupting exciter current of voltage regulators (5) for fault protection when used with power fuses.

Load interruption is accomplished by means of a quick-break blade action as shown in figures 1 to 4. This action rapidly elongates and draws the arc toward the base of, and within a confining chute. The lining of this chute when heated generates gases favorable to arc extinction.

The "SL" Interrupter Switch can be supplied in single-pole, two-pole and three-pole units for hook-stick or remote control. It is also available as a complete unit for mounting directly on transformers. Metal enclosures are optional.

Available in voltage ratings 5, 7.5 and 15 kv. at interrupter ratings of 400, 200 and 100 amperes respectively. Continuous ratings can be in excess of interrupter ratings because main disconnect is independent of interrupter unit.

FOR COMPLETE LISTING AND DESCRIPTION ASK FOR OUR PUBLICATION 4612

DELTA-STAR ELECTRIC COMPANY

MAIN OFFICE AND FACTORY — 2400 Block, Fulton St., Chicago 12, Ill.
NEW YORK OFFICE — 140 Cedar St., New York 6, N. Y.

DISTRICT REPRESENTATIVES IN THE FOLLOWING CITIES

Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Charlotte, N. C.
Cleveland, Ohio
Dallas, Texas
Denver, Colo.
Detroit, Mich.
Indianapolis, Ind.
Jacksonville, Fla.
Kansas City, Mo.
Knoxville, Tenn.
Los Angeles, Cal.
Minneapolis, Minn.
Norfolk, Neb.
Norfolk, Va.
Philadelphia, Pa.
Pittsburgh, Pa.
Richmond, Va.
Roanoke, Va.
St. Louis, Mo.
San Francisco, Cal.
Seattle, Wash.
Tampa, Fla.
Washington, D. C.
Honolulu, Hawaii

CANADIAN ASSOCIATE
Canadian General Electric Company Limited — Toronto, Canada

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

Electronic BILL COMPUTATION Automatically...

by the IBM ELECTRONIC CALCULATING PUNCH

Computation of utility bills is greatly speeded by the IBM Electronic Calculating Punch, a highly flexible machine which performs the following operations automatically:

1. Determines consumption.
2. Applies meter constants.
3. Considers meter turns for 3, 4, and 5 dial meters.
4. Calculates total consumption for combined meters and meter changes.
5. Extends bill amounts in accordance with rate schedule blocks.
6. Computes fuel adjustment amounts.
7. Determines total bill amount by adding consumption charge to fuel adjustment amount.
8. Calculates prorated bill amount if period is irregular.
9. Determines whether minimum charge applies.
10. Punches consumption, fuel adjustment, and bill amount into billing cards.

This Electronic machine performs the computation for all bills, including that for *irregular* bills, at a uniform speed of 100 cards a minute.

Our descriptive booklet, "Customer Accounting For Electric, Gas, and Water Utilities" is available upon request.

IBM

INTERNATIONAL BUSINESS MACHINES CORPORATION

World Headquarters Building, 590 Madison Avenue, New York 22, N. Y.

This page is reserved under the MSA PLAN *(Manufacturers Service Agreement)*

Pages with the Editors

HORACE WALPOLE, in one of his famous letters, had a cynical observation to make about prophets. "Prognostics," he said, "do not always prove prophecies; at least, the wisest prophets make sure of the event first." But it is in the very nature of year-end prophecies, which are so common at this particular time, to base the forecast upon moving causes which already are discernible. It is the old story of the coming event casting its shadow before it.

AND it is probably for the same reason that our managing editor, FRANCIS X. WELCH, is able to show, once again, a fairly good record of "hits" as distinguished from "misses," in reviewing the forecast he made for the year 1949 in this magazine one year ago. As the review page in the opening article in this issue will show, MR. WELCH managed to come through with an average accuracy of about 80 per cent. This is at least a passing average; and it should keep his card in the Prophets Union in good standing for another 12-month period.

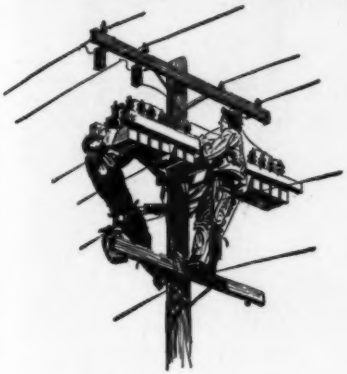
BY the same token, this pretty fair record for 1949 should add a little zest to the ten predictions for 1950 which appear in the opening article of this issue. We note, however, that the author has refrained from giving us any clew as to the outcome of the congressional elections next fall. We can imagine, after what happened to the greater part of the tribe of political prognosticators on that fateful day of November 2, 1948, that there will be more than a little skittishness about projecting the results of the forthcoming congressional elections.

AND it certainly should not come as any surprise that the first of these forecasts for 1950 predicts something in the nature of a minor revolt in Congress on the subject of taxes. With President Truman insisting that they go up and with the vast majority of letters to the Congressmen insisting that they go down—

WARD F. DAVIDSON

our Representatives and Senators must feel, at times, as if they were caught between a couple of grindstones. Our house prophet predicts that out of this conflict will come a stalemate, which strikes us as a pretty safe forecast, except that stalemate may be too polite a word to use for the results, after the collision takes place in Congress.

ANOTHER fairly safe forecast is that the Federal Power Commission will encounter local resistance over the question of expanding its jurisdiction under the Natural Gas Act. This hardy perennial has been with us ever since the Natural Gas Act was written on the statute books. And it shows no signs of any early departure, judging by the way the state utility commissioners and the producers and gatherers of gas continually protest and adopt resolutions against so-called "encroachment" by the Federal Power Commission. Oddly enough, even the FPC during the last couple of years has developed a somewhat split personality with reference to this problem—an internal conflict which may be resolved during the year ahead. At least, that is another one of the 1950 predictions by MR. WELCH.



***This is strictly your problem . . .* but this needn't be!**

• You wouldn't call on a bank to engineer a new power system. But if you have a new fiscal program to "engineer"—or any financial problem to solve—that's a different story.

One entire department of the Irving Trust Company, for instance, specializes exclusively in public utilities. Here you can discuss your business with understanding men who combine financial "know-how" with an intimate working knowledge of the industry itself.

If you would like to know more about our Public Utility Department, why not give us the opportunity to tell you?

TOM P. WALKER—*Vice President in charge*

IRVING TRUST *Company*

ONE WALL STREET • NEW YORK 15, N.Y.

Capital Funds over $117,000,000 *Total Resources over $1,100,000,000*

WILLIAM N. ENSTROM, *Chairman of the Board*
RICHARD H. WEST, *President*

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

ANOTHER featured article in this issue gives us a careful background analysis of events which led up to this conflict over local gas control. It is an article by HENRY F. LIPPITT, II, of the New York city bar (beginning page 13) which likewise projects the consequences, with reference to local gas regulation, if the jurisdictional aspirations of the FPC are fully realized. It is plainly no mere problem of legalistic quibbling or jurisdictional pitter-pat. According to MR. LIPPITT the projected lines of FPC concepts portend eventual domination of virtually every phase of the natural gas industry from the wellhead to the burner tip—congressional restrictions notwithstanding.

BORN in California, MR. LIPPITT is a graduate of the Massachusetts Institute of Technology ('36) and Harvard Law School ('42). During the war he served with the power division of the old War Production Board and later as a naval officer with the Army-Navy Munitions Board. After a short period of practice with a Los Angeles law firm, MR. LIPPITT took up his present specialty of utility practice in New York city.

* * * *

ANOTHER big question mark in the utility field which looms very large in the months ahead, is the effect which atomic power may have on electric power systems. Ever since the historic devastation of Hiroshima in 1945, forward-looking minds in the electric utility industry, and other utility industries as well, have been probing and delving into the possibility of applying nuclear fission to the production of a public electric power supply. We have heard various estimates—ranging from one to three decades from the date of the first atomic bomb explosion—as to when a practical atomic power-generating plant might be brought into successful operation. Nobody seems to question the fact that such a result will eventually materialize. The main difference of opinion seems to be over the time factor.

IN this issue we present an article which deals with other factors as well.

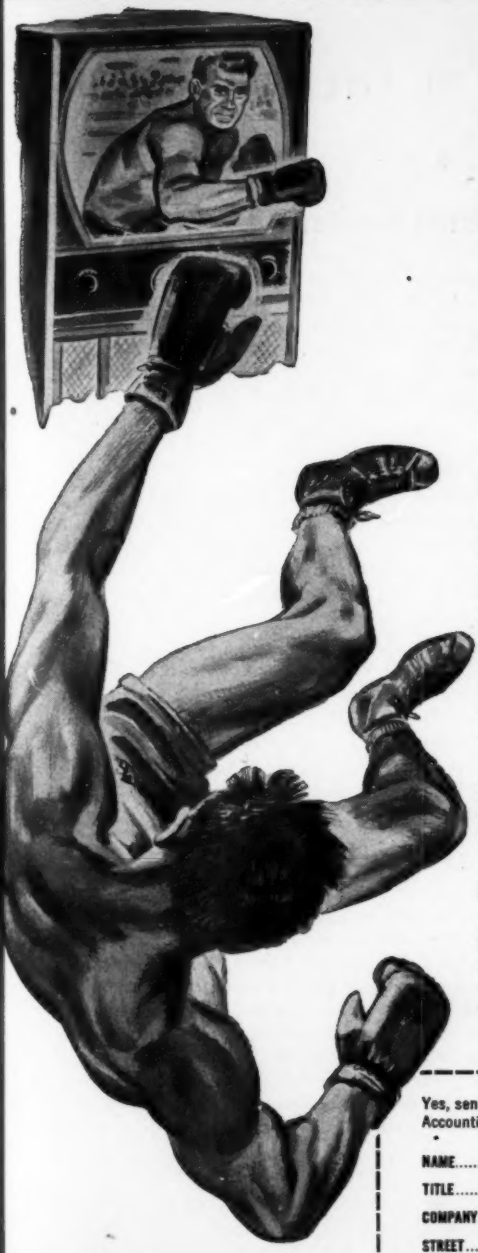
HENRY F. LIPPITT II

The economics, the engineering, and the operating problems of harnessing the atom to the electric generator. In his article (beginning page 26) WARD F. DAVIDSON, research engineer of Consolidated Edison Company of New York, Inc., undertakes to give us some tentative answers to these difficult questions.

THIS author was born in Commonwealth, Wisconsin, in 1890 and graduated from the University of Michigan (BS, '13; MS, '20). He joined Westinghouse Electric & Manufacturing Company as a student engineer in 1914, and served with the United States Army in World War I as an engineer with the AEF. After some service with the faculty of his alma mater, he became director of research for the Brooklyn Edison Company and the Consolidated Edison Company of New York. DAVIDSON has been very active in the scientific and industrial councils of electric research. Since 1927 he has also been active on various electric engineering committees of the National Research Council.

THE next number of this magazine will be out January 19th.

The Editors



HOW CLOSE TO THE RING CAN YOU GET?

...When it comes to your business, *you* can be right smack in the center—with Remington Rand punched-card accounting!

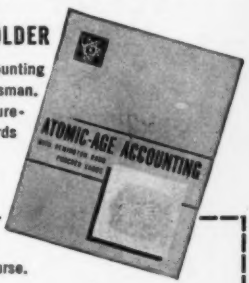
You'll see every business fact from every business angle. Every fact machine-tabulated ... accurately ... while it's live and timely ... *and at lower cost than any other method.*

In public utility accounting, for example, the *same* cards that give you the records prescribed by state and regulatory bodies can be used to prepare current functional reports—Labor, Materials, Transportation, Accounts Payable, Journal Entries—all automatically. It adds up to this: you can keep right on top of your operations and make more profitable management decisions—because you have the facts almost as soon as they happen.

Our new folder, "Atomic-Age Accounting," *shows* how punched cards produce results like these, and *save you money!* For your copy, simply fill out and send us the coupon below.

SEND FOR THIS FOLDER

Brings punched-card accounting into focus for the businessman. A quick, simplified picture-story of what punched cards can do for you.



Yes, send me "Atomic-Age Accounting." No obligation, of course.

NAME.....

TITLE.....

COMPANY.....

STREET.....

CITY.....ZONE.....STATE.....

MAIL TO: Accounting-Tabulating, Dept. MCT-9, Management Controls Division, Remington Rand Inc., 315 Fourth Avenue, New York 10, N. Y.

Remington Rand

PUNCHED-CARD ACCOUNTING MACHINES

This page is reserved under the MSA PLAN *(Manufacturers Service Agreement)*

Coming IN THE NEXT ISSUE

★

HOW TO GET THE SMALL INVESTOR INTERESTED

The rich man's burden—high taxes—has created the poor man's opportunity. The greater dividends now available from well-established stocks are becoming more attractive to those of modest means who can count their blessings and keep them within the framework of the income tax brackets. Larston D. Farrar explores the possibility of utility companies using this new mass market for raising equity capital. It will require new promotional techniques.

IS TEXAS RUNNING DRY?

Man's oldest and most vital utility service—water supply—is in danger of serious impairment in the nation's largest state, as a result of heavy withdrawals, increasing population, and industrial usage. Here is a frank appraisal of the Texas water problem, and proposed solution for it by Ernest R. Abrams, New York city business writer.

HOW ELECTRICITY CAME TO 100,000 FARM CUSTOMERS

How one electric power company celebrated the connection of its 100,000th farm customer in the state of Michigan. H. J. Gallagher, general farm service supervisor of the Consumers Power Company, gives us the development story of the nation's most patronized electric utility company, from the standpoint of farm service customers.

A COURSE FOR ELECTRIC UTILITY WORKERS

Has the electric utility industry grown so swiftly that large blocs of its employees have become locked off into watertight departments, without comprehension or understanding of what the others do, or of the over-all function of the business? Here is a review of a new course designed to be a common denominator for leveling these barriers, so as to give employees a balanced picture through a process that is enjoyable as well as informative. Arnold Haines, Washington business writer, reviews a recent special course, "Simplified Electricity," formulated for utility workers by a veteran New York state power industry man, P. R. Rutledge, and finds new features worthy of industry-wide attention.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***

Blyth Distribution

Nationwide, *coast to coast* distribution facilities have enabled Blyth & Co., Inc. over the years to play an outstanding part in effecting nationwide, *coast to coast* ownership of public utility securities in this country.

As an Underwriter of and a Dealer in public utility bonds, preferred stocks and common stocks, we offer our facilities.

Blyth & Co., Inc.

NEW YORK • SAN FRANCISCO • CHICAGO • LOS ANGELES • SEATTLE • PORTLAND
BOSTON • SPRINGFIELD • PHILADELPHIA • PITTSBURGH • CLEVELAND • INDIANAPOLIS
LOUISVILLE • DETROIT • MINNEAPOLIS • HOUSTON • DALLAS • SPOKANE
OAKLAND • EUREKA • SACRAMENTO • FRESNO • SAN JOSE • PASADENA • SAN DIEGO

Remarkable Remarks

"There never was in the world two opinions alike."
—MONTAIGNE

GLEN R. BEDENKAPP
Member, New York Public Service Commission.

"[If the public service commission increases rates] so as to guarantee a fair return to the utilities, it must also increase rates to cover Federal and other additional taxes which result from increased income."

FREDERICK C. OTHMAN
Columnist.

"What makes me a bitter man is the fact that I have to sit up late at night, working to pay my income tax, and Uncle Hard Heart nicks me 20 per cent on the electric light bulb that makes this possible."

Excerpt from the Monthly Letter, published by National City Bank of New York.

"Good profits not only created an incentive for new investments, but they have provided a large share of the money needed. By making possible the great outpouring of finished goods, they have already solved the problem of shortages in many lines."

CRAWFORD H. GREENEWALT
President, du Pont de Nemours Company.

"We have made our progress only because we have been willing, individually and collectively, to invest more and more money in providing these tools of production. Since 1924 the investment in American industry has nearly doubled. But back of that willingness to save and invest, to risk these savings in industrial ventures, is the hope of profits."

EVERETT E. HAGEN
Professor of economics, University of Illinois.

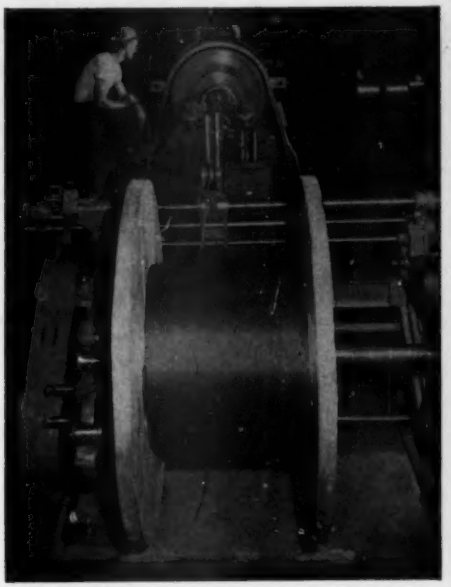
"The increase in Federal expenditures, continued strength in the residential construction market, and the great need for roads, schools, and the expansion of all kinds of public and private utilities to care for the expanded urban population, together insure more than sufficient demand to offset any softening elsewhere in the economy."

E. W. PALMER
Vice president, National Association of Manufacturers.

"Without throwing any rocks at any particular heads in our political leadership and without attempting to slam any doors in any other peoples' face, now is the time to fight Socialism in Washington. And such a fight cannot be waged by a small group of determined Americans convinced of the dangers already lurking in the corridors of public buildings in that fair city. It must be the concentrated, continuous, and consecrated effort of every mother's son of us—Americans all—with the one purpose of preventing the encroachment of this 'creeping collectivism.'"

From start... to finish...

AT KAISER ALUMINUM'S Newark, Ohio plant, the production of high quality Kaiser Aluminum conductor starts in the remelt department. Here high purity pig from its own reduction plants is remelted and cast into 99.5% purity ingots 6" square and 12' long. These pass through a series of automatic break-down and finishing mills to become rod ready for wire drawing.



ROD IS DRAWN into wire on the most modern equipment in the electrical conductor industry. High speed cable stranders, manned by skilled personnel, produce the finished conductor, which has been tested at every step by modern methods and equipment. Result of this completely integrated production control is pictured above — aluminum conductor of unsurpassed quality!

Controlled for quality!

As important as the high quality of Kaiser Aluminum Conductor is the consistently dependable deliveries assured by Kaiser Aluminum's centrally located Newark, Ohio plant.

Early delivery schedules of all sizes of ACSR and all-aluminum conductor are now open. For immediate information, contact any sales office listed below.

Kaiser Aluminum Conductor is produced by Kaiser Aluminum & Chemical Corporation.

Kaiser Aluminum

CONDUCTOR

Sold by KAISER ALUMINUM & CHEMICAL SALES, INC., KAISER BLDG., OAKLAND 12, CALIF.... *Offices in:* Atlanta Boston Chicago Cincinnati Cleveland Dallas Denver Detroit Houston Indianapolis Kansas City Los Angeles Milwaukee Minneapolis New York Oakland Philadelphia Portland, Ore. Rochester, N. Y. Seattle Spokane St. Louis Wichita • *Also available through General Electric Supply Corp., Westinghouse Electric Supply Co., and Line Material Co*

BERNARD M. BARUCH
Presidential adviser.

"It is unfortunate that the general public does not appreciate the immense importance of having effective plans for the mobilization of our industrial, human, and spiritual resources. . . . Modern wars are won not by the biggest battalions but by the biggest factories."

JOHN ADIKES
President, Savings Bank Association of the State of New York.

"I'm confident no candidate could be elected on a socialist ticket today. But a 'welfare state'—that sounds fine. People do not understand there is no difference between a socialist state and a welfare state. They are told what the government will give and we all know it's human nature to like something for nothing."

HENRY M. WRISTON
President, Brown University.

"The businessman who insists that profits are the primary objective is as effectively hostile to democracy as the Russians. The primary objective is to supply a human need; profits are an incentive to supply it, but to confuse purpose with incentive is folly. Business cannot exist without profits but profits should be justified by performance."

HARRY E. HUMPHREYS, JR.
President, United States Rubber Company.

"[The eleventh hour] is here for business to speak for itself. The men who run American business must devote as much if not more time to the public relations of their business as they spend on finance, production, and distribution. Unless they do, they will not need to worry about the latter problems. Government will be glad to handle them all."

E. T. LEECH
Late editor, The Pittsburgh Press.

"In many ways John L. Lewis is changing America's economic life. The strange thing about it is that he is the nation's most ruthless and unfettered rugged individualist. Yet his whole course is heading toward state control over unions, business, and labor relations. Government cannot indefinitely tolerate any power bigger than itself. Otherwise it ceases to be sovereign."

LUDWIG VON MISES
Economist.

"Where there is no free market economy, the best-intentioned provisions of constitutions and laws remain a dead letter. When the government interferes it chips away the individual's freedom of action. That explains why, for instance, under the present British socialist law, if an unemployed person does not take the job offered to him by the government, he is subject to a jail sentence."

GEORGE S. BENSON
President, Harding College.

"Capital is not the enemy of the workingman, but his best friend. Able industrial leaders are not a burden on labor, but its great benefactors. . . . In this crucial period, more dangerous than many yet realize, it is the duty of every informed American citizen to do his part to instruct the present generation in the comparative achievements of our competitive private enterprise system."

How many are having increases?

IT'S mighty important to know how many of your consumers' bills are showing marked increases . . .

. . and you want to know how many in each classification are showing decreases.

To help you classify such information, we have developed the Bill Frequency Analyzer. With it, we can analyze your bills in ½ the usual time . . . and at approximately ¼ the cost of having the work done in your offices by your own personnel.

This specially designed electro-mechanical equipment is capable of analyzing as many as 100,000 bills each day. The cost to you is but a tiny fraction of a cent per item.

Would you like this?

A free booklet, "The One Step Method of Bill Analysis," tells more about this accurate and economical method of compiling consumers' usage data. Send for it now.

This Bill Frequency Analyzer—developed especially for utility usage data—automatically classifies and adds in 300 registers in one step.

RECORDING AND STATISTICAL CORPORATION

100 Sixth Avenue New York 13, N. Y.

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

The Analysts Journal

. . . is essential reading for every well-informed Public Utility Executive

Published quarterly, this professional journal concerns itself with the important financial problems confronting our major industries. Your organization should have it available for ready reference

Subscription Price — $4 per Year

Published by

The NEW YORK SOCIETY OF SECURITY ANALYSTS, Inc.

25 Broad Street, New York 4, N. Y.

EXIDE-MANCHEX PLATES *are DIFFERENT*

EXCLUSIVE Positive Plate showing lead button construction—rolled strips of corrugated lead, which are pressed securely into holes of the lead antimony grid.

Only a small portion of total lead in button is formed initially into active material; the remainder is available for gradual conversion in service.

The famous and exclusive positive plate is the result of 62 years of battery-building experience. During that time we have learned much about the design and construction of every type of battery for every application. Development work never ceases in improving the performance of Exide Batteries. Our research staff is the largest in the industry. Engineers, chemists, metallurgists, physicists, technicians and their aides, equipped with all the necessary tools and devices, are constantly building and testing various types and kinds of plates and assemblies.

We have yet to find a positive plate with all the desirable characteristics of the Exide-Manchex for use in switchgear and other central and sub-station services. Further proof of its superiority is supplied by long service records in thousands of installations.

For maximum dependability, long life and low cost maintenance, use Exide-Manchex Batteries for all stationary applications. They provide up to 100% more capacity in the same given space.

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

1888—DEPENDABLE BATTERIES FOR 62 YEARS—1950

"Exide-Manchex" *Reg. Trade-mark U. S. Pat. Off.*

This page is reserved under the* MSA PLAN *(Manufacturers Service Agreement)

PUBLIC UTILITY PRINTING SPECIALISTS

Pandick Press has worked closely with utility companies for more than a quarter of a century. Our printing services to this industry range from highly technical legal documents to beautifully illustrated descriptive brochures.

Whatever the nature of your printing requirements, we believe you will like the assurance of accuracy and highest quality that "Service by Pandick" brings you.

- REGISTRATION STATEMENTS
- PROSPECTUSES
- ANNUAL REPORTS
- INDENTURES

Pandick Press, Inc.
Established 1923

22 THAMES ST., NEW YORK 6
71 CLINTON ST., NEWARK, N.J.

A QUARTER CENTURY OF SERVICE

1 to 30,000

Distribution of operating company equities to owners of utility holding company stocks creates many new problems. Instead of a single common stockholder the operating company finds itself with many thousands, necessitating additional personnel to handle dividends, reports and proxies for regular or special meetings.

Many of these problems can become routine with the help of our experienced organization.

Why not write today for a copy of our leaflet "What we do—How we do it."

GEORGESON & CO.

Specialists in Stockholder Relations
52 Wall Street, New York 5, N. Y.
Telephone HAnover 2-1470

Boston - Philadelphia - Chicago - Los Angeles - San Francisco
Representatives in all Principal Cities

This page is reserved under the* MSA PLAN *(Manufacturers Service Agreement)

The New International TD-24

Now it's available—the new International TD-24—America's most powerful and versatile crawler tractor. Only the new TD-24 gives you 180 engine horsepower at the flywheel and 140 horsepower at the drawbar—more engine horsepower and more drawbar horsepower than any crawler tractor available today.

This is the tractor that can cut your costs in coal stock piling. Job proved by more than 300,000 hours of operation, the new International TD-24 handles coal in 10-ton passes. Operators have found it to be the easiest handling and most maneuverable crawler tractor on the market today.

See your International Industrial Power Distributor and find out all the facts about the new TD-24. Dollar for dollar, feature for feature, the new TD-24 gives you more for your money than any tractor built. Now is the time to put it to work for you.

INTERNATIONAL HARVESTER COMPANY
Chicago

Standardize on Power that Pays

CRAWLER TRACTORS
WHEEL TRACTORS
DIESEL ENGINES
POWER UNITS

INTERNATIONAL HARVESTER

INTERNATIONAL INDUSTRIAL POWER

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

Out Ahead Again FOR 1950!

New Power and New Features in Light and Medium Duty Models
New "Weight-Saving" Diesel Tractors • New Middle-Weight Six-Wheele

Once again GMC leads the truck transport parade . . . once again GMC introduces improvements in design . . . once again GMC widens the scope of truck performance.

All along the line new 1950 GMCs lead the way. New camshafts, valves and manifolds step up the power of light-medium models. Wider seats, more headroom and improved sealing increase their cab comfort. And there are new chassis features, including new hydraulic and optional air brakes on 2½-ton models, new front springs and airplane-ty shock absorbers on light trucks.

The new models combine to offer GMC powe dependability and economy to many mo operators. There's a new 1½-ton "280" . . . new heavy duty 2½-ton "470" . . . two ne "400" and "620" six-wheelers . . . two ne "weight-saving" Diesel-powered tractors bui to handle maximum legal payloads in th 45,000-55,000 pound weight range. See you nearest GMC dealer for complete information

Public utility operators will find a model ideally suited to their hauling needs in the GMC line which ranges from 4,600 pounds GVW to more than 90,000 pounds GCW. For example, the new "280s" of 11,000 GVW, the new "470s" of 20,000 pounds and the new "400" and "620" six-wheelers of 24,000-32,000 pounds are especially well adapted to private enterprise or corporate government transport work.

GMC
GASOLINE • DIESEL
TRUCKS

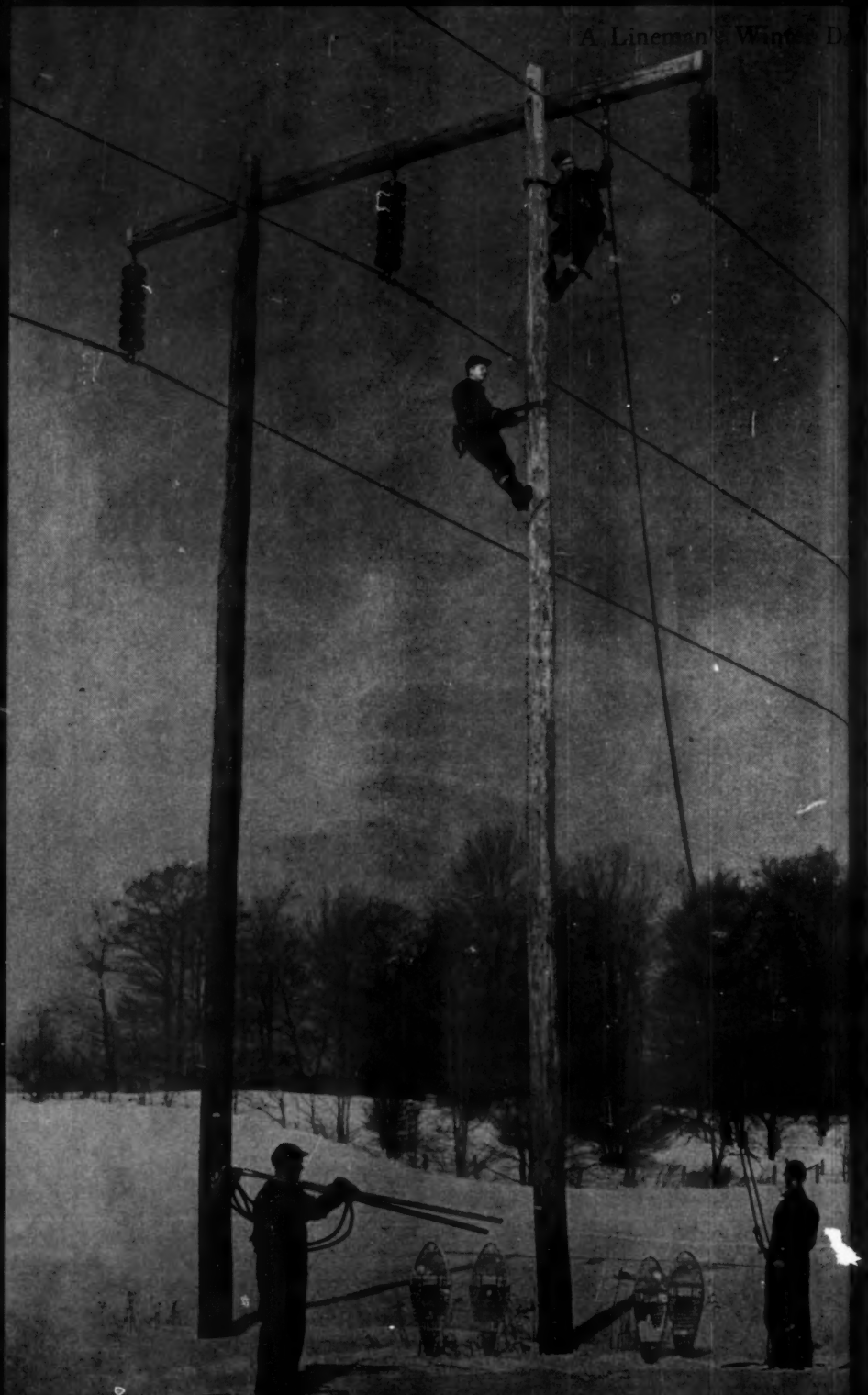
GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

Utilities Almanack

JANUARY

5	Th	¶ *Edison Electric Institute, Industrial Relations Committee, will hold meeting, New Orleans, La., Jan. 19, 20, 1950.*
6	F	¶ *American Society of Heating and Ventilating Engineers will hold annual meeting, Dallas, Tex., Jan. 23–27, 1950.*
7	Sa	¶ *Southwest Air Conditioning Exposition will be held, Dallas, Tex., Jan. 23–27, 1950.*
8	S	¶ *Midwest Industrial Gas Council will hold annual meeting, Chicago, Ill., Jan. 27, 1950.*
9	M	¶ *American Institute of Electrical Engineers will hold winter general meeting, New York, N. Y., Jan. 30–Feb. 3, 1950.*
10	Tu	¶ *Pennsylvania Electric Association, Transmission and Distribution Committee, will hold meeting, Harrisburg, Pa., Feb. 16, 17, 1950.*
11	W	¶ *National Association of Home Builders will hold annual meeting, Chicago, Ill., Feb. 19–23, 1950.*
12	Th	¶ *Federal Communications Bar Association holds dinner honoring FCC, Washington, D. C., 1950.*
13	F	¶ *Texas Telephone Association will hold annual convention, San Antonio, Tex., Mar. 6–8, 1950.*
14	Sa	¶ *New England Gas Association will hold annual convention, Boston, Mass., Mar. 23, 24, 1950.*
15	S	¶ *Associated Equipment Distributors begin meeting, Chicago, Ill., 1950.* ¶ *Canadian Construction Association begins meeting, Montreal, Quebec, Canada, 1950.*
16	M	¶ *Plant Maintenance Show and Conference begins, Cleveland, Ohio, 1950.*
17	Tu	¶ *American Water Works Association, New York Section, holds mid-winter luncheon, New York, N. Y., 1950.*
18	W	¶ *Georgia Association of Broadcasters ends meeting, Macon, Ga., 1950.*



Public Utilities
FORTNIGHTLY

VOL. XLV, No. 1 JANUARY 5, 1950

The Washington Outlook for Public Utilities–1950

Analysis of the possible consequences of new developments in Congress and Federal agencies respecting various utility industries during the New Year.

BY FRANCIS X. WELCH*

WHEN the curtain rings up on the opening of the next congressional session in Washington, D. C., there will still be the same 81st Congress which occupied the premises on Capitol Hill during the torrid months of the longest peacetime session in our nation's history — the session of 1949. Only a sprinkling of new faces will appear. The august heads of the salons, as viewed from the gallery, may appear slightly grayer or balder. There will probably be an inch or two of added girth here and there, thanks to a happy holiday season of home cooking.

But, by and large, it will be the same crowd who pondered so futilely the works of Messrs. Taft and Hartley, who listened to eloquent pleas extolling the grasshopper and condemning the ant. The same bunch who tinkered timidly with inflation ills and economic chills. It will be the same Congress that rode into power on a surprise victory, with criticism of their predecessor—the "do-nothing" Congress — ringing in its ears, only to match the record, so far, with even less impressive accomplishment. Yes, man for man, and

*Managing editor, PUBLIC UTILITIES FORTNIGHTLY, Washington, D. C.

woman for woman, there won't be much noticeable change. But the climate in Washington will be quite different. Much more chilly than the pleasant atmosphere which surrounded the inaugural festivities of a year ago.

On the surface, the Washington scene is much quieter than it was in January, 1949. Political band wagons have been kept carefully under cover. The plums have been largely distributed, from the halls of Montezuma to the palace at Luxembourg. Even the lobbyists, making the swift completion of their appointed rounds, despite snow, rain, and the darkness of the night, do so as quietly as possible. The once ubiquitous 5 per centers are behaving themselves like maragons of all virtues.

THERE is a definite reason for this chilly atmosphere, as the year 1950 breaks over the world's most important capital city. Any Congressman can find it, any day, on his own desk. In short, the folks back home are complaining about taxes.

Not within the memory of members now serving have the mail pouches brought forth such a torrent of mingled pleading, indignation, and downright abuse on the single subject of tax collections. Never have the rank and file citizens shown evidence of being so acutely tax conscious. What's more, Washington observers expect this river of complaint to continue rising, until it reaches a peak flood stage on or about the Ides of March, when the average citizen is sharpening his pencil and tearing his hair over dear old Form No. 1040.

As one cynical member quaintly put the situation: "Ever since the war Uncle Sam has been throwing a party for the American people. Some of them are just beginning to find out they are expected to pick up the check."

In plain words, the Federal government is facing a sort of tax rebellion. This much was obvious to the knowing ones along the Washington rialto even before Christmas. For that is the season of great preparations in the Budget Bureau. The various departmental heads in the Cabinet were invited to try on their proposed appropriations, for size, before the master budget director decided on how the forthcoming fiscal appropriation cake is to be cut. And while outward decorum was preserved, the occasional cries of anguish, escaping from behind the Washington scenery, told all too plainly that there was a difference of opinion among President Truman's chosen disciples.

WITH this general background setting, let us venture without more ado into the shadowy field of prognostication, and attempt to forecast ten major developments in Washington which will have the most effect on the public utility industries in the United States:

1. *Dogfall on taxes.* On this general subject of taxes, Congress finds itself the center of a 3-way squeeze. The *spending* branch of the Cabinet, led by Agriculture Secretary Brannan, who has his new and more expensive model of farm subsidy to promote in 1950, wants the President to repeat his request for higher taxes. The *collecting,* or economic, branch of the Cabinet personified by Treasury Secretary

RESULTS OF 1949 PROPHECY

Roughly, eight of the following ten predictions by Mr. Welch one year ago occurred as forecast.

Forecast	*Result*
1. *Reorganization.* The Hoover Commission will seek consolidation of Army Engineers with Interior Department on public works. But Congress will not approve.	RIGHT *The Hoover Commission's recommendation along this line has been stalled so far in Congress.*
2. *Emergency controls.* Allocation of materials and price control probably will be voted on a stand-by basis.	WRONG *With a minor exception such authority was not approved.*
3. *Gas regulation.* No revision of the Natural Gas Act in Congress, although bills will be introduced on the subject, and divided reports of the FPC will be given congressional airing.	RIGHT *The House passed such legislation, but the Senate has yet to agree.*
4. *Taxes.* Because of the pressure of armament spending there is little hope for reduction in excise taxes on telephone, telegraph, passenger fares, etc.	RIGHT *Congress talked a lot, but did nothing on this.*
5. *Wage-hour law.* Congress will enact an amendment to the Fair Labor Standards Act increasing the minimum wage from 40 cents to approximately 75 cents an hour.	RIGHT *Congress boosted the minimum, also slightly increased the exemption of small telephone company operators' wages.*
6. *Labor laws.* Little change in the Taft-Hartley Act, except possibly a change of name and the validation of closed shop agreements.	PARTIAL *Congress made no change whatever—even in the name.*
7. *REA legislation.* Continued high appropriations with no restrictions will be voted for REA. It may also be given authority to make loans for rural telephone service.	RIGHT *REA got its highest appropriation—a half billion. Also telephone loan authority.*
8. *New power projects.* No new valley authorities, although the St. Lawrence is given the best chance of affirmative action.	RIGHT *St. Lawrence as well as the valley authorities failed to obtain congressional approval.*
9. *Federal power agencies.* Removal of restrictions on both TVA (steam plants) and the Reclamation Bureau (competitive transmission lines), with plentiful appropriations for the latter.	RIGHT *In every detail.*
10. *The FPC. Regulatory policy* of the FPC will be oriented towards the propublic ownership views of the Olds-Draper-Buchanan faction.	PARTIAL *The faction developed, but Olds was rejected—his successor Wallgren is still a question.*

The Author's 1950 Predictions Will Be Found on Page 7

Snyder and Commerce Secretary Sawyer contends that present government tax policies are self-defeating. It is felt that such taxes are scaring off investors and cooking the golden goose of American business expansion. The Sawyer-Snyder faction would even favor tax *reduction,* especially in the elimination of high excise profits tax.

Utilities have a major interest in this angle, in view of the 25 per cent wartime excise tax still being collected on long-distance telephone calls and telegraph messages, the 15 per cent tax on train, plane, and bus passenger fares, and the special tax on monthly telephone bills (15 per cent), as well as certain appliances such as electric light bulbs.

If Congress could simply let the tax raisers and tax collectors cancel each other out, the lawmakers' task would be simplified, if not particularly fruitful. But there are other complications. There are those multiple headaches pouring out of the mailbags. There is the Federal deficit, getting bigger every minute. There is the political risky suggestion that a repeal of excise taxes could be largely offset by plugging tax-exemption loopholes, through the restoration of coöperatives and other specially privileged nonprofit business organizations to the tax rolls.

So, our prediction on this is one of agonizing futility. After wrestling with these various factors for the first half of the year 1950, look for a "dog-fall" in Congress—whereby the general level of taxes will neither be raised nor lowered. As for the coöperatives, after all the smoke and fury of parliamentary agitation have cleared away, their tax exemption will still be there. The 81st Congress is not going to pick on any such political pets, with the congressional elections coming up next fall. In 1951 maybe — but not 1950. Another thing that will still be there, bigger if not better, will be the Federal deficit. Look for the budget to be thrown even more off balance, if Congress yields to the politically pleasant operation of cutting down, or cutting out, wartime excises.

Aside from the possible cut in the excises, about the only benefit which the utilities may gain from this tax stalemate, is the fact that the specter of the deficit should keep the second session somewhat more economy minded, on domestic spending, than was the first session. Such agencies as the Reclamation Bureau and the Rural Electrification Administration, which reached all-time record appropriations in 1949, may have to skimp along on red caviar instead of black in the year ahead. This next appropriation will be in the order of hundreds of millions instead of billions. And new public power projects, still on the shelf, may have to stay there another year.

2. *Labor legislation.* The prediction on this might be stolen out of a routine page of a weather forecaster's book. It would go something like this: High winds becoming somewhat warmer, but with little change in prevailing conditions. There is a chance that Congress will not even pass a bill to change the name of the Taft-Hartley Act, to the more Democratically orthodox label of Thomas-Lesinski Act. But if it does pass any law on the subject, it will probably be a change in name, and little more. Congressmen and their constituents, who have noted

Predictions of Events for 1950

(Here is a summary of the things likely to occur in Washington of special concern to the public utility industry.)

1. *Taxes.* Furious discussion but no change likely in general personal or corporate tax levels. Likewise, as to removing tax exemption on coöperatives, etc. But a fair chance of some tax relief from high wartime excises, including telephone and telegraph rates, passenger fares.

2. *Labor legislation.* Again, more storm than action. Name of Taft-Hartley Act might be changed; but not much else.

3. *New power projects.* CVA will get most of the propaganda and pressure play in Congress. But it will not pass any more than the St. Lawrence, Missouri valley, or other similar authorities.

4. *Public power politics.* Plenty of it. The Fair Deal administration will attempt to base its 1950 congressional campaign largely on regional power benefits, *à la* TVA, particularly in New England and other areas which have not so far tasted this sort of pork.

5. *Public power policy.* Two big feuds looming for a showdown. (1) FPC *versus* Interior, to determine whether public power is subject to Federal regulation or vice versa. (2) Agriculture Department moving into Interior's control over water resource developments. Senate will also inspect Interior's contracts, or lack of them, with private companies.

6. *Gas and other fuel policy.* Oil men are worried over natural gas expansion and may seek to slow it down through regulatory restriction, possibly via the Interior Department. Congress, worried by John L. Lewis, may pass some form of coal regulation. Congress may follow through with pending legislation exempting natural gas production and gathering from FPC control. FPC may voluntarily retreat in this field if new Commissioner Wallgren swings the balance.

7. *Lobby investigation.* A special House committee cannot put on much of a show with its present limited funds. But might make enough showing against both bureaucratic lobbies and big business lobbies to get more money and another lease on life. Public utility industries can expect some share of the spotlight.

8. *Atomic energy policy.* Ex-Chairman Lilienthal's departure may mark a trend away from "liberal-civilian" domination of AEC policy. Closer AEC coöperation with industry may be one result.

9. *Communications policy.* Look for both the REA and the telephone industry to strive for rapid progress in rural telephone service. Plea of Western Union for some form of tax and other relief by Congress may get favorable action, especially as to excise taxes. The FCC will not give color television the green light until it has mulled over the problem most carefully.

10. *Utility rates.* Trend towards higher rates in all forms of utility services (gas, electric, transportation, and communications) should continue well through the year. But look for transit systems reaching the point of diminishing return and seeking some other way out—possibly through tax remission.

the recent liberty of action—not to say strikes — enjoyed by the labor unions and their leaders, are growing rather cold to the argument that organized labor has been enslaved or chained by the Taft-Hartley Act or anything like it. With John L. Lewis still on the loose, it is pretty hard to put that argument across these days.

3. *New power projects.* A good bit of the earlier steam has gone out of the Fair Deal drive to put over a Columbia Valley Administration bill in the 81st Congress. But it still has plenty of punch. A Senate subcommittee will hold hearings in the Pacific Northwest, and if the Senators are convinced that the people out that way really want it, such a bill may actually get out of committee. But this writer does not look for such a development. Nor for any other development in Congress to authorize any new valley authorities, whether on the Columbia, the Missouri, the St. Lawrence, or any other river basin. The voluminous speech making and pressure play—which will center principally about the CVA—will be mainly for propaganda purposes. That immediately brings us to the next topic.

4. *Public power politics.* The year 1950 will long be remembered for the amount of shouting from the administration house tops on the subject of public power, and the blessings thereof. Look for the regional meetings of the Democratic party to be converted into veritable wind tunnels for the testing, and exercise, of this pet political issue of President Truman's. He believes in it. He cherishes it. He has told many an aspiring candidate that, if he would reach the goal of political salvation, he must sell short many another political issue and join in the chorus of hosannas for public power.

The party strategy on this seems to be that if heretofore relatively conservative areas, such as New England, can be infected with a taste for the same sort of Federal pork as the western states and the Tennessee valley have long enjoyed, the purveyors of these benefits will be blessed with the favor of the electorate. Whether this advice will prove to be the Straight Dope, for success in the election next fall, may be debatable. But it is certain that the administration's faithful will follow the party line, as far as the political tub thumping is concerned. Don't be surprised, however, if that good old party war horse, "Veep" Barkley, who can spring a pretty good imitation of a wind tunnel when he puts his mind to it, gives over his earlier rôle of leading the chorus. A new keynoter on the public power issue is rumored to be coming right up in the Democratic councils.

5. *Public power policies.* The year 1950 may mark the most critical period in the evolution of postwar public power policy. Two knockdown-and-drag-out fights, more or less unrelated to each other, will be the featured attraction.

First, there is the showdown which Interior Department seems determined to have with the Federal Power Commission over the latter's right to grant hydroelectric licenses to private power companies, at river sites where the Bureau of Reclamation has indicated that it has any designs of its own. Of

course, this feud has been going on for some time. But it came to a head last summer when a U. S. District Court in Idaho tossed out ex-Secretary Krug's suit for an injunction to block the Idaho Power Company from building a line over government lands, regardless of whether the FPC had granted a license or otherwise.

Interior appeared to be under the impression that Secretary Krug had merely to "order" the FPC not to grant such a license; or if it did, the license would not mean anything under such circumstances. That particular fire may have been put out by the completion of the Idaho Power Company's line, under an FPC license which was fixed up to placate the Interior Department demands. But the Interior attorneys took pains to rub out the court records, with a motion to "vacate" the proceedings, including the Federal judge's opinion that FPC has a paramount right (in the granting of hydroelectric licenses) unless Congress has definitely voted otherwise.

Yet the basis for the feud still lingers on, and probably will be battled through the courts, Congress, and even the White House before it is finally settled. The recent action of the FPC in granting Pacific Gas and Electric Company a license to build a dam on the Kings river in California (over Interior's protest) may mean another court test. Ditto, with respect to the FPC's action on the pending petition of the Virginia Electric & Power Company for a license to build on the Roanoke—Interior notwithstanding.

But regardless of what the courts may do in such cases, the Interior people can still take their case, first of all to Congress, and then to the White House. *The fundamental principle at issue is whether Federal power regulation is subject to public power development, or vice versa.* Every time the FPC grants one of these licenses to a private company, over Interior's objection, the doctrine of paramount FPC jurisdiction becomes consolidated that much more. In the balance of such a policy test, actual construction, plus possession, is many points of law.

The other policy feud has to do with the *interdepartmental* struggle over domination of Federal river development. This has been going on for years between the Army Engineers and the Interior Department, resulting in an uneasy alliance known as the Pick-Sloan plan and its variants. But now a new rival has entered the field—the Agriculture Department — with ideas of its own about conservation.

❦

¶ *"On the surface, the Washington scene is much quieter than it was in January, 1949. Political band wagons have been kept carefully under cover. The plums have been largely distributed, from the halls of Montezuma to the palace at Luxembourg. Even the lobbyists, making the swift completion of their appointed rounds, despite snow, rain, and the darkness of the night, do so as quietly as possible. The once ubiquitous 5 per centers are behaving themselves like maragons of all virtues."*

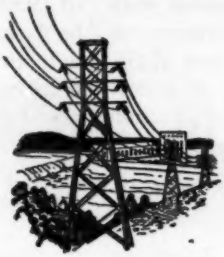
One of the reasons given for ex-Secretary Krug's hasty departure from the Washington scene was the stinging rebuke he gave, in a letter to Congress, to Agriculture Department's ideas about entering the irrigation picture. Agriculture Secretary Brannan's star is in the ascendancy right now. So look for more developments along this line. The new Interior Secretary Chapman, by nature a quiet, tactful man and personal friend of Secretary Brannan, may smooth things over. But Agriculture Department experts still do not see the sense of bringing too many new acres into farm production, via Interior's expensive irrigation works, when it all helps to keep the Treasury broke trying to pay for crop surpluses on the farms already in production. This, plus some Agriculture Department theories about erosion control and keeping waters impounded on farm lands (instead of gathering it into giant dams or deep navigation channels) suggests some serious policy maneuvers at the Cabinet level in 1950.

6. *Gas and other fuel policy.* Early in 1950 we can expect the Federal Power Commission to show which way its majority stands on the question of regulating independent producers of gas. It will take the vote of the new member, Vice Chairman Wallgren, to decide whether the FPC will voluntarily back down on the unexpectedly broad field of jurisdiction which the Supreme Court gratuitously threw to the FPC in the Interstate Gas decision of 1947. While it is something in the nature of *lèse majesté* to try to guess the outcome of a quasi judicial decision, this writer thinks that the FPC majority will decide that discretion is the better part of regulatory wisdom, in this case.

Aside from what the FPC may do, however, there is the prospect of Senate approval during the year of the House-approved Harris Bill. This bill, which will be adopted by Senator Kerr (Democrat, Oklahoma) in lieu of his own similar bill, definitely spells out exemption of the independent gas producers, as an amendment to the Natural Gas Act. Whether it will be greeted at the White House with a cool signature or a hot veto, remains to be seen. Much may depend on what the FPC finally decides in the forthcoming Delhi Oil Corporation Case.

Incidentally, certain important oil men seem to be quite concerned over the steady march of "cheap" natural gas into eastern fuel markets. Certain leaders of the petroleum industry are reported to have suggested a joint government and industry study of the growing competition between natural gas and petroleum fuels. The idea would be to have the Interior Department call for a report from the National Petroleum Council, an industry group appointed by the Secretary of Interior and set up to coöperate with the Federal government on fuel policy matters. The council would make a check on the present and prospective fuel market situation within the United States. Its report on the same would, presumably, be the basis for proposed congressional action.

Cautious natural gas industry leaders will question the wisdom of inviting government interference with industrial fuel competition. The outcome of any such study is likely to lend support to the arguments of administration advisers who have contended



Public Power Politics

"THE year 1950 will long be remembered for the amount of shouting from the administration house tops on the subject of public power, and the blessings thereof. Look for the regional meetings of the Democratic party to be converted into veritable wind tunnels for the testing, and exercise, of this pet political issue of President Truman's. He believes in it. He cherishes it."

for some form of over-all Federal fuel regulation. Pushed to extremes, such a program might bring not only regulation of fuel prices, but production, consumer utilization, and conservation under Federal control. The coal industry, so far, has shown no taste for Federal regulation. Congress may give it a taste in the form of a revised version of the old Guffey Act. But that will be for the benefit of John L., rather than basic fuel policy.

7. *Lobby investigation.* Do not look for too much of a splash of the current House investigation into lobbying. Although it has only a widow's mite ($40,000), this special committee, headed by Representative Buchanan (Democrat, Pennsylvania), already has split itself into two mutually exclusive probing efforts. The Democrats want to go after big business lobbyists. The Republicans want to go after bureaucratic lobbyists. But both sides may make enough showing to get more money and another lease of life. In any event, the public utility industries can expect to have their practices, with respect to legislative agents, given some share of the spotlight.

8. *Atomic energy policy.* The departure of Chairman Lilienthal from the Atomic Energy Commission may mark a trend away from so-called "liberal civilian" domination of the commission's policy. Whatever one may call it, the AEC up to now has not shown too much disposition to become intimately coöperative with the private power industry or any other private industry on the subject of commercial application of nuclear energy. On the contrary, ex-Chairman Lilienthal has constantly stressed the necessity for government monopoly to the point which carries antiutility en-

terprise overtones—all too familiar to the ears of electric companies with their background of experience on public power policy. The new chairman of the AEC may mark, or at least give some clue to, the future direction of the commission along these lines.

9. *Communication policies.* The telephone industry has only a year's grace under the new rural Telephone Loan Act to make hay in the field of rural telephony under the sunshine of Federal financing via REA. After that the field will be open for REA to make competitive loans under certain service conditions.

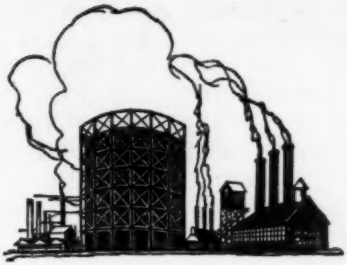
So far, the going has been pretty slow. But, in all fairness, REA telephone loan activity is only a pup. Look for both REA and the telephone companies to make rapid progress before the end of the year. REA will probably ask for and receive about $100,000,000 for rural telephone loans during the fiscal year which starts next July 1st.

Congress will have to do something about the financial plight of Western Union if the telegraph industry is to survive. The recent plea of Western Union President Marshall for a combination of tax abatement, elimination of unwarranted competition, and modernization may strike some responsive chord in congressional bosoms. If it doesn't, the telegraph industry will go the way of the dodo bird before another decade passes. At least Congress will probably do something about the telegraph excises in 1950.

One other item is the controversial question of color television. The FCC will probably dance around with this particular hot potato for the whole year of 1950. Just when the green light will be flashed for color television remains with the FCC, probably the toughest regulatory nut that commission has ever had to crack in all its stormy fifteen years of statutory life. Meanwhile, only appendectomies and other surgical examples will appear in technicolor, so far as the nonexpert public is concerned.

10. *Utility rates.* The long lag of utility rates, behind the earlier upswing of other postwar commodity prices, should remain fully in force throughout most of the year 1950. In other words, transit, telephone, gas, and even electric rates will generally continue upward to cover rising operating expense experience. But the going will be tougher with each new round of rate increases. Political pressure on the public service commissions is going to make each such rate case a little harder to argue than the one before.

Another economic barrier already is looming for the transit companies. Experience shows that they are coming near the point of diminishing return, in some cities, as a result of higher fares scaring away the passengers. And this is true for municipal as well as private transit companies — maybe even more so. City-owned systems in Boston, New York, Chicago, San Francisco, and Detroit are all showing deficit temperatures, despite fare raises. And Chicago has the highest fare in the country (15-17 cents). It may be that some form of tax relief, in lieu of further fare increases, will be the only way out. Western Union came to that conclusion sometime ago.



Is the FPC Encroaching on Local Gas Regulation?

Even though the Supreme Court may decide against FPC jurisdiction over gas companies exclusively engaged in distribution within a state, the recent trend of FPC interpretation suggests the need of positive clarification of the Natural Gas Act.

By HENRY F. LIPPITT II*

One of the principal regulatory developments of the past fifteen years has been the establishment of Federal utility regulation. Not only have the Federal agencies, the Federal Power Commission, the Securities and Exchange Commission, the Federal Communications Commission, and the Civil Aeronautics Board closed major gaps in the regulating system, but their actions have served as regulatory guides in the local field.

However, this is not the whole story. Along with such guidance has emerged a Federal extension over local activities that has increasingly become a matter for widespread public concern. Local utilities, for the first time becoming subject to Federal regulation, are concerned. So are state utility commissions whose decisions are becoming relegated to secondary significance. So are the taxpayers who must finance part of this regulatory expansion by the Federal government.

Today the obvious example of this increasing Federal jurisdiction is the regulatory control which the FPC has attempted to impose on local natural gas distributing companies. (About to be decided before the U. S. Supreme Court is an FPC petition in the East Ohio Gas Company Case,[1] which will determine whether FPC may regulate operations of a company exclusively engaged in the distribution of natural gas within the borders of a single state for local service sales and not resale, and whose lines, lying entirely in Ohio, accept delivery of a wholesale supply

*For personal note, see "Pages with the Editors."

from an interstate pipe-line company. Other essentially similar cases are pending before the FPC.)

Actually it was soon after the Natural Gas Act amendment of February 7, 1942 (which opened up the FPC's jurisdiction to markets not already served with natural gas), that the FPC showed an increasing interest in bringing local gas distribution companies under Federal jurisdiction. Today, this "increasing interest" has reached the point where all but the smallest local gas distribution companies in the United States are threatened with Federal regulation.

A REVIEW of the commission's jurisdictional decisions to date indicates, by and large, that two test questions have been used to determine the jurisdictional boundaries in particular cases:

Does the company's gas eventually go to another state?

Does the company's gas come from another state?

These questions the commission asks irrespective of whether a company's operations are entirely within an individual state or not. Instead of confining itself to those companies not regulated by the individual states, the commission seems to seek for itself the widest jurisdiction given it under the Supreme Court's definition of interstate commerce, and to date, with few exceptions, it has generally succeeded. Apparently nothing short of a forthright amendment to the Natural Gas Act, which will spell out clear-cut jurisdictional limitations for the FPC, will suffice to require the FPC to disclaim jurisdiction in the realm of state and local regulation. Till then, only the relatively few companies in gas-producing states which produce, transmit, and deliver all their requirements for local consumption within those states will, in the last analysis, be safe if the commission's views prevail.

FPC data show there are at least 43 cases now pending before the commission involving the latter's jurisdiction over natural gas companies *located entirely within a single state, and under state regulatory supervision.*

The legal basis for all this centers around § 1(b) of the act, which specifically states that it shall apply to "natural gas companies engaged in . . . interstate transportation or sale,"

> . . . but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas, or to the facilities used for such distribution.[8]

When Congress wrote that into the law it was faced with the basic problem of occupying the field in which the Supreme Court had held that the states might not act. It was primarily concerned with regulating the large interstate pipelines actually crossing state borders which were not then subject to *any* regulation. It was not as concerned with regulating those local companies within the confines of a particular state distributing or reselling natural gas (even out-of-state gas) which were already subject to state regulation.

Sales for Resale

SINCE enactment of the Natural Gas Act, two decisions of the Supreme Court have reinforced by inference the supremacy of Federal jurisdiction over wholesale or distribution companies within a particular state which resell

for local distribution. These are the Illinois Natural Gas and Colorado-Wyoming cases.[3]

The necessity for these decisions may be doubted. In the first case, the Illinois Commerce Commission was trying to effectively administer the Illinois Natural Gas Company's affairs before the order was upset by the Supreme Court. In Colorado until the Supreme Court's decision, the Colorado Public Utilities Commission had adequate regulatory powers granted it by the legislature over sales of the Wyoming company's gas to privately owned utilities for resale within the state. No other calculation of such sales within the state by the FPC would have been necessary to close the gap in regulation. Except for the Supreme Court's ruling, this lack of justification for Federal regulation is equally pointed today, whether it involves a similar individual gas pipeline ferrying out-of-state gas from one point to another in California, Colorado, or Connecticut.

Yet consider the lengths to which the FPC has gone in asserting jurisdiction in such situations as the Central New York Power Corporation Case.[4] Here the company took delivery of out-of-state natural gas at a point 50 miles within the state boundary. From there, the gas was carried about 15 miles to the company's plant in Syracuse, where it was mixed with manufactured coal gas at reduced pressures to produce a mixed supply for public service. One of the company's customers taking this mixed gas from the company's distribution system at one-quarter-pound pressure was the Syracuse Suburban Gas Company, Inc., serving 700 customers in the outlying village of East Syracuse.

IN spite of this clearly local situation, already adequately regulated by the New York commission and involving only two-thirds of one per cent of the company's sales, the FPC, urged by its staff, asserted jurisdiction over the Central New York Power Corporation, reciting, among others, the fact that "natural gas is, at a point in transit . . . mixed with artificial gas and then further transported for sale for resale does not change the interstate character of the transaction . . . " (65 PUR NS 515.)

Ironically, this company's officers had testified at the congressional hearings prior to the original enactment of the Natural Gas Act, and were informed in this very situation:

> But you are not selling in interstate commerce; you are selling locally. You are selling at the point where interstate commerce leaves off.[5]

Rather than invite continued litigation, the company acquiesced.

Today in over 40 states the state utility commissions have been given ample jurisdiction over gas sales to privately

¶ "TODAY *in over 40 states the state utility commissions have been given ample jurisdiction over gas sales to privately owned utilities for resale, within a particular state, according to an FPC study. In only a few states—mainly where the problem has not arisen—is any apparent power in the state commission lacking.*"

owned utilities for resale, within a particular state, according to an FPC study.[6] In only a few states—mainly where the problem has not arisen—is any apparent power in the state commission lacking.

Sales for Local Consumption

THE situation with regard to Federal regulation of local gas distribution companies purchasing out-of-state gas only for sale and ultimate consumption by the company's own customers is equally disturbing. While the Natural Gas Act specifically states that it shall not apply "to any other transportation and sale of natural gas or to the local distribution of natural gas, or the facilities used for such distribution," the construction and administration of this language by the FPC has resulted in the extension of its jurisdiction increasingly into local gas matters.[7]

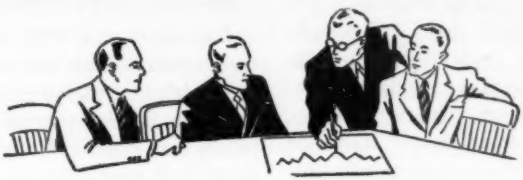
From the various cross-country pipelines, local gas-distributing companies take out-of-state natural gas at delivery pressures ranging around 200 pounds per square inch and convey it (sometimes utilizing the initial 200 pounds or so delivery pressure, and sometimes at reduced transmission pressures of from around 50 pounds upward) to the local company's existing manufactured gas plant (if it has one) or directly to the local company's transfer or distribution system, or to the local company's storage holders.

At these various sites, the original pressure may be reduced to around five pounds or so, if it is to be introduced into the company's manufactured gas plant or directly into its branch transfer system, or the original pressure may be reduced to one-half-pound to three-quarter-pound pressure if the gas is to be put in storage in the company's holders or to be directly fed into the company's one-half-pound distribution system pressure. Thus a number of intermediate pressure-reducing (and some pressure-increasing) operations may intervene between the initial 200-pound or more delivery pressure at which the local gas company receives gas, and the final one-quarter-pound pressure or less at which the usual residential customer receives the gas at the burner tip.

IF the U. S. Supreme Court's earlier criterion in the East Ohio tax case[8] is followed, almost every local gas distribution plant in the United States receiving or planning to receive some out-of-state natural gas would be subject to FPC jurisdiction because of some relatively high-pressure transmission facilities. These the FPC could construe as facilities for the "transportation of natural gas in interstate commerce" under § 1(b) of the Natural Gas Act. (And such is still the situation today where a company makes individual intrastate sales for resale.)

In such a situation, it would appear to be a clear case of "the tail wagging the dog." The high-pressure facilities over which out-of-state gas is initially received or resold constitute, for most companies, only a small fractional part, perhaps 1 per cent to 5 per cent, of the company's total gas plant in service. All of this, including the stub or resale line, is located within the state boundaries.

Even for some companies with a more extensive "stub-line" problem, the "stub line" (or resale line) amounts to no more than 15 per cent to



Gas Regulatory Field Expanding

"THE interstate transmission of natural gas is growing by leaps and bounds. Sooner or later many now isolated local gas distribution companies may at least enter into emergency connections with adjacent utilities, thus becoming part of an intrastate network subject to Federal jurisdiction. Such has been the comparable experience of the electric utilities."

25 per cent of the local distribution company's plant in service. But as Carl I. Wheat, a specialist in natural gas legal problems, put it:[9]

> . . . the principles enunciated would apparently apply equally to a pipeline only a few miles long, or even a couple of feet long.

The FPC, furthermore, has not seemed disposed to follow the practical line, that such local jurisdiction can be more trouble than it is worth. The Mount Morris Gas Company is a fair example. Here is a small family partnership serving some 246 residential customers in a borough (population 432) near the Pittsburgh-West Virginia border. Total gas plant in service at the end of 1947 amounted to $19,539; total yearly revenues, $11,789.

IN September, 1942, the Mount Morris Gas Company sought permission to construct a 3-inch and 3½-inch pipeline extending from its distribution facilities approximately 4,400 feet and connecting with the 12-inch pipeline of Hope Natural Gas Company at the point where the latter crossed into Pennsylvania. The FPC granted a temporary certificate but found, at the same time, that the applicant would be "engaged in a transportation of natural gas in interstate commerce upon completion and operation of the proposed pipeline." Hearings were held in April, 1944. Briefs were submitted. On March 20, 1945, the commission entered a final order declaring the company to be a natural gas company under the Natural Gas Act.[10] To avoid the burden of test litigation the company complied.

Other small companies entirely within a particular state have similarly felt the commission's long regulating arm. Producers Gas Company, serving 3,740 customers in five small communities near Olean, western New York, has been declared a natural gas company.[11] Likewise, the Wisconsin South-

ern Gas Company, serving 5,079 customers around Geneva, Wisconsin. On December 5, 1944, the FPC sought compliance with such orders by the Pavilion Natural Gas Company, serving 6,235 customers around Geneseo, New York, and the Southern Tier Gas Corporation, with a single resale customer taking $66,890 worth of gas annually.

The listing in the commission's petition (for certiorari) in the East Ohio Case of more than 43 companies entirely within individual states is mute eloquence in pointing out the trend of the times.

In a letter of FPC Chairman Manly to the chairman of the New York Public Service Commission dated March 10, 1945, the commission's position with regard to some of these small companies in New York state was very plainly stated:

> . . . It is, of course, immaterial whether the companies in question "operate exclusively within the state of New York," as you put it. If by this is meant that the facilities are located wholly within the state, the Supreme Court has unanimously held that this commission has jurisdiction under the Natural Gas Act if the corporation is engaged in the transportation of natural gas in interstate commerce or the sale in interstate commerce of such gas for resale even though all its facilities are located within the state receiving the gas (Illinois Natural Gas Co. *v.* Central Illinois Public Service Co. 314 US 498 (1942) [42 PUR NS 53]). Likewise, the fact that all of the companies concerned (except Southern Tier Gas Corporation) are also engaged in the local distribution of gas does not remove them from the jurisdiction of this commission, although it does afford a basis for your exercise of exclusive regulatory authority over their purely intrastate rates.[12]

Obviously, the FPC apparently has recognized neither the principle of *"de minimis"* nor the principle of supplementing, but not usurping, state regulatory supervision. [13] The FPC apparently feels that it has no choice but to exercise the full extent of jurisdiction conferred on it by the Supreme Court without taking into account the existence or effectiveness of state regulation.[14]

As a result of such aggressive policy, the FPC has assumed jurisdiction over a total of 114 companies, classified as "natural gas companies" under the act. This amounts to 25 per cent of the customers, 47 per cent of the assets, and 54 per cent of the revenues of the reporting gas industry in the United States.

What This Control Means

To date, the FPC has not exercised its powers under §§ 7(f) and 7(g) of the act. These provide that the commission may determine the service area to which a natural gas company is to be limited. However, it is not inconceivable that if the commission could fasten its authority on local distribution companies it might attempt to remake utility service areas in what, from the Washington viewpoint, might be regarded as the "national interest."

The commission has a variety of other powers under the act to require the extension of facilities, to approve the abandonment of service, and to control construction (§§ 7(a), (b), and (c)).

While such powers are restricted to facilities under the jurisdiction of the commission, if construction or aban-

donment of a high-pressure branch transmission line is an essential part of service to a new area, for example, the FPC might attempt to assert veto power over any contrary decision of a state commission or local municipal ordinance. Such implications of future managerial "double checking" by the commission over service problems are disturbing.

THEN, there are the broad powers over a local gas distribution company's costs and accounts to be considered. The FPC might require the filing of an original cost study (§ 6(f)) or the prescribing of individual detailed depreciation rates (§ 9(a)). Filing of an original cost study is all very well for a company not subject to any state or other commission regulation, but for one which is completely under state regulation it could be an expensive and time-consuming burden. Thus, East Ohio Gas Company (already subject to jurisdiction of the Ohio Public Utilities Commission) might have to spend as much as $1,500,000 or even $2,000,000 on such an original cost study. Since "fair value" and reproduction cost new, and not original cost, are the basis of regulation in Ohio, the usefulness of such an effort would be doubtful, to say the least.

That the FPC would require complete compliance with its Uniform System of Accounts for a company's basic corporate books, leaving only memorandum accounts under state commission jurisdiction, is another fact to be weighed.

Here, also, is an instance of the "stub-line" tail wagging the whole dog. The accounts which the FPC would regulate are not merely those applicable to the high-pressure "interstate" facilities. They would be the complete accounts and records of the whole company.

Thus, after attaching its jurisdiction to an insignificant percentage of a company's assets, the FPC would apply its System of Accounts to the whole company. This might well mean, for every unusual entry, or request to destroy certain records, that the local gas company would have to write from as far as Maine and California to secure dispensation from Washington before proceeding with its accounting business. Small wonder that the FPC asks for more funds to carry on with the Natural Gas Act.

True, the commission has so far exercised only a passive jurisdiction over such companies. It has required only the filing of annual reports or the occasional submission of special information. Much of this would normally be furnished by the companies con-

"ONE *of the principal regulatory developments of the past fifteen years has been the establishment of Federal utility regulation. Not only have the Federal agencies, the Federal Power Commission, the Securities and Exchange Commission, the Federal Communications Commission, and the Civil Aeronautics Board closed major gaps in the regulating system, but their actions have served as regulatory guides in the local field.*"

cerned as a matter of courtesy. But this is not to say that unless restrained by Congress or the courts the commission might not at any time activate these dormant cases on its own motion. This regulatory sword of Damocles hangs uneasily over the industry's head.

ONCE the FPC asserts the full extent of the jurisdiction it desires, the states and their commissions would have left to themselves an exclusive regulatory authority perhaps only over a few local rate schedules. As former Chairman Manly of the FPC said,[15] presaging the current state of affairs, "henceforth it will be necessary" to draw "necessary and proper distinction among the subject matters over which either the state or the Federal agency may have exclusive jurisdiction and those regarding which they may concurrently exercise control."

If this view is to prevail, an intolerable state of duplicate Federal and state regulation may well lie ahead for most intrastate local gas wholesale and distributing companies, with conflicts between Federal and state commissions placing the utilities squarely in the middle.

In addition to the intolerable situation which would be imposed on local natural gas distributing companies under such a system of duplicate regulation, friction is bound to develop as an increasing amount of Federal interference is projected into state and local activities.[16] Whether this will end with the gradual decline in importance of state public utility regulation and an ascendance of Federal regulatory activities will depend largely on future events.[17]

In the field of service and supply, a conflict already has developed between the FPC and the Illinois Commerce Commission regarding the allocation of gas to be made to Illinois consumers, with the FPC position prevailing.[18]

IN the field of accounting, the FPC's action in the Arkansas Power & Light Company Case,[19] in asserting its paramount jurisdiction over the basic corporate books of account nullifying contrary state orders—over a company, less than one per cent of whose facilities were exclusively used in interstate commerce, has already provoked litigation reaching the Supreme Court.[20] It has aroused action—as yet ineffective—by the National Association of Railroad and Utilities Commissioners. Since the section of the Federal Power Act here involved is identical with and the pattern for a similar section in the Natural Gas Act, it is a portent for similar problems involving natural gas companies.

At least one state commission early realized the import of the FPC's expanded activities. On the receipt of copies of three letters addressed to local gas-selling and -distributing companies within New York state, declaring them to be "natural gas companies within the meaning of the Natural Gas Act," Chairman Maltbie of the New York Public Service Commission made a pointed reply.[21] He stated:

> The New York State Public Service Commission strongly protests this assumption by your commission of jurisdiction over a purely intrastate company. Each of these companies is completely regulated by this commission under authority of the state of New York in respect to its service, rates, the issuance of securities, accounting, and all other matters affect-

ing the furnishing of gas to consumers. To require these companies to make annual and other reports to your commission seems to us an unnecessary duplication of effort and expense both on the part of the company and the Federal regulatory body. What effective use can be made of duplicate reports and accounting? What useful purpose will be served by such additional regulation?

We have already considered the forthright answer of Chairman Manly of the FPC reiterating a determination to subject to Federal regulation many new phases of local distribution companies, except purely intrastate rates not for resale.

Growth of FPC Activities

At the present time, the FPC has a total staff of about 900 employees and an annual appropriation of $4,030,000. This compares with about 450 employees in 1938 and a total appropriation then of around $1,700,000.

There are no up-to-date accurate data on the total number of employees, or the annual budgets of the individual state public service commissions having jurisdiction, among other functions, over local gas distribution companies. In 1936, however, the total state commission funds for the 35 state commissions then reporting to a special survey of the National Association of Railroad and Utilities Commissioners was about $8,000,000, representing a total of probably about 3,500 or more employees.[22] Allowing for a reasonable increase in personnel and expenses, the order of magnitude of 1948 state regulatory commission expenditures may be considered to be somewhere in the neighborhood of $10,000,000, to cover perhaps 3,500-4,000 employees.

If it is considered that at least half the work of the state commissions—a conservative guess—is concerned with the regulation of electric and gas utilities within the individual states, the *minimum* likelihood (over a period of perhaps another ten years) of the prospective increase in FPC jurisdiction is to double—perhaps triple—the size of the FPC staff and its annual expenditures.

If present FPC policies continue, perhaps in 1960 the commission will have a staff of 2,000 and an annual appropriation of $8,000,000. Whether or not there would be a concurrent decline in the personnel and funds available for state regulatory work is at least problematical.

Proposed Reform

To relieve this situation, three identical bills have been introduced in the present session of Congress.[23] These bills have been endorsed and supported by the National Association of Railroad and Utilities Commissioners, several individual commissions,

ANALYSIS OF PERSONNEL AND PERSONNEL COSTS

	Personnel	*Costs*		*Personnel*	*Costs*
1939	596	$1,587,735	1945	661	$2,371,616
1940	787	2,148,924	1946	687	2,595,614
1941	782	2,115 276	1947	779	3,278,876
1942	828	2,147,043	1948 est.	835	3,483,471
1943	793	2,101,147	1949 budget ...	876	3,723,643
1944	671	2,324,985			

and some municipal law officers. To date, however, there has been little noticeable support, even from the industry as a whole. This may be due to a failure to recognize the magnitude of the stake involved. It may be due to inertia pending outcome of the appeal from the East Ohio Gas Case decision, and congressional disposition of the bill for partial exemption of "production and gathering" companies. Whatever the explanation, there has been little industry support.

These three reform bills mentioned provide exemption for two classes of local distributing companies:

(1) The first is a company which purchases, sells, and delivers natural gas, within a particular state, for general public use, without resale.

(2) The second is a company which purchases natural gas within a particular state but sells part or all of it to one or more gas companies, municipalities, or government agencies, which in turn resell it for general use and consumption within the state.

The bills further provide that the local gas companies so exempted should be "subject to regulation by the various states" so that there will be no gap in the regulating process.

Similar bills were introduced in the 80th Congress (1947), and testimony and statements were presented by sponsors and by representatives of the National Association of Railroad and Utilities Commissioners. The chief engineer of the Illinois commission, the chairman of the Ohio commission, and counsel and president of the East Ohio Gas Company also testified. The New York commission and interested municipal law officers filed supporting statements. But these bills became tied up with the proposed exemption of "production and gathering" activities. This legislation, after passing the House on July 11, 1947, and being recommended for passage by the Senate subcommittee, was rejected by the full Senate Committee on Interstate and Foreign Commerce, 9 to 4, on May 14, 1948, pending completion and study of the FPC's natural gas investigation.[24]

ACTION so far in the 81st Congress has been even less auspicious, even though the amendments were separated from the controversial exemption of "production and gathering" activities. A statement was made by the chairman of the House committee on April 26, 1949, that further hearings would be held on local distribution bills about a month later. While further hearings were held by the committee on the exemption of production and gathering activities, no testimony or statements were presented as to the exemption of local gas distribution companies under the Natural Gas Act.

It is clear today that, whatever the decision of the Supreme Court in the East Ohio Case, passage of such legislation is required if an orderly system of unified state regulation—instead of duplicate Federal-state regulation—is to prevail. Due to the existing shortages of manufactured and natural gas in individual states, state legislation is being enacted to force gas interconnections between adjacent companies. Provisions exist for the FPC to order such interconnections "if the commission finds that no undue burden will be placed upon such natural gas company thereby."[25]

If, for instance, a municipality within the territory of a local distribution

The Growth of the FPC

"If present FPC policies continue, perhaps in 1960 the commission will have a staff of 2,000 and an annual appropriation of $8,000,000. Whether or not there would be a concurrent decline in the personnel and funds available for state regulatory work is at least problematical."

company were to take over the municipal distribution of gas within the city limits, a resale of gas would become effective, and this might also be true in a military reservation where gas was resold (by rent inclusion or "submetering") to personnel living on the post. Further, the mere fact of the existence of cross-country pipelines serving local distribution companies will facilitate gas exchanges between companies served by the common line. Therefore, even if a local distribution company should be exempted, initially, from Federal regulation (on the basis of the Supreme Court decision in the East Ohio Case, where the company participates in no resale of gas even within the state), there is no assurance that it will remain in such an exempt position.

THE interstate transmission of natural gas is growing by leaps and bounds. Sooner or later many now isolated local gas distribution companies may at least enter into emergency connections with adjacent utilities, thus becoming part of an intrastate network subject to Federal jurisdiction. Such has been the comparable experience of the electric utilities.

In some instances, the local gas distribution companies may feel that because emergency gas interchanges—often settled by a return of gas in lieu of repayment in money—are very small, the commission may apply *"de minimis"* considerations in exempting companies who resell a half or one per cent or less of their total gas to neighboring utilities, municipalities, or government agencies. Such expectations have a very shaky foundation. In similar instances, involving electric utilities under comparable provisions of the Federal Power Act, the commission has asserted jurisdiction on the basis of sales of as little as one-fifth of one per cent of the local distributing company's total energy to an out-of-state utility.[28]

At the moment, perhaps the plans of

local gas distribution companies to sell their high-pressure "stub lines" or turn over their resale customers to the cross-country pipelines already under FPC jurisdiction may afford a temporary palliative.

Eventually, however, there seems little or no alternative to continued expansion of Federal regulation over local gas distribution companies, short of clear-cut legislative revision which would spell out the boundaries of FPC control.

Conclusion

THAT a situation which permits duplicate Federal regulation over local distributing companies located within a particular state was never one contemplated by Congress is certain from the hearings, committee reports, and congressional debates. Yet such is the obvious tendency under the expanded definition of "interstate commerce," as interpreted by the present Supreme Court.

The states are able to and do effectively regulate the companies and sales and resales involved. Under the circumstances, it cannot be said that the intent of Congress, under the Natural Gas Act, was to prohibit the exercise of such jurisdiction by the states, or substitute its assumption by the Federal government.[27]

Plainly, some legislative correction is necessary if the present system of state supervision of local gas distribution companies is not to be swallowed up in the maw of Federal regulation.

Footnotes

[1] Federal Power Commission *v.* East Ohio Gas Co., Inc. No. 71, argued November 10, 1949, to review USCA, DC, (1949) 77 PUR NS 97.

[2] See also § 5(b) of the act.

[3] 314 US 498 (1942) 42 PUR NS 53; 324 US 626 (1945) 58 PUR NS 94.

[4] 65 PUR NS 510 (1946).

[5] Hearings before House Committee on Interstate and Foreign Commerce, HR 4008, March 24, 25, 1937, 75th Congress, 1st Session, page 104.

[6] State Commission Jurisdiction & Regulation of Electric & Gas Utilities, 1948, FPC 1948, pages 2, 3, 16, 17.

[7] The commission apparently relies, in this, on the case of East Ohio Gas Co. *v.* Tax Commission of Ohio, 283 US 465 (1931). There, the U. S. Supreme Court said that the transportation of out-of-state gas by high-pressure transmission lines of a company whose facilities were wholly intrastate was "essentially national—not local—in character" and only "when the gas passes into the supply mains . . . and loses nearly all its pressure does it pass out of interstate commerce and become a business of purely local concern." (But see: Panhandle Eastern Pipe Line Co. *v.* Public Service Commission of Indiana, 332 US 507 (1947) 71 PUR NS 97.

[8] See Note [7].

[9] Wheat, "Administration by the Federal Power Commission of the Certificate Provisions of the Natural Gas Act," 14 *George Washington Law Review* 194, 207, 208 (December, 1945).

[10] 3 FPC 818 (1942), 4 FPC 877 (1945).

[11] 4 FPC 418 (1943).

[12] Hearings on Amendments to Natural Gas Act, House Committee on Interstate and Foreign Commerce, 80th Congress, 1st Session, April, May, 1947, page 362.

[13] See Commissioner Smith dissenting in *Re* Colorado Interstate Gas Co., Opinion No. 182, November 2, 1949; Commissioner Draper dissenting in *Re* Consolidated Edison Co., Opinion No. 181, October 27, 1949.

[14] But see in this connection Order No. 139, restricting the FPC's own action in spite of jurisdiction conferred over "producers and gatherers" in Interstate Natural Gas Co. *v.* Federal Power Commission, 331 US 882 (1947) 69 PUR NS 1.

[15] Excerpts from letter of March 10, 1945, to chairman of New York Public Service Commission, Natural Gas Investigation, Docket

G-580, Ex. 310, Q. 34. (Also Hearings on Amendments to Natural Gas Act, House Committee on Interstate and Foreign Commerce, 80th Congress, 1st Session, April, May, 1947, page 362.)

[16] Instead the FPC might ask permission to make its staff available to state commissions without the reimbursement required in § 17(c) of the Natural Gas Act.

[17] Contrast this with the FPC's limitation on asserting jurisdiction over security issues regulated by a state commission under § 204(f) of the Federal Power Act.

[18] 172 F(2d) 222 (1949).

[19] Opinion No. 174, dated February 15, 1949.

[20] 330 US 802 (1947).

[21] Excerpts from letter of January 11, 1945, to chairman of Federal Power Commission, Natural Gas Investigation, Docket G-580, Ex. 310, pages 32, 33.

[22] Proceedings of National Association of Railroad and Utilities Commissioners, 1937, page 219.

[23] S 1831; HR 4001, 4028.

[24] Proceedings of National Association of Railroad and Utilities Commissioners, 1948, page 78.

[25] Natural Gas Act, 7(a). No exemption from jurisdiction by reason of any such mandatory interconnection is provided.

[26] Connecticut Light & Power Co. *v.* Federal Power Commission, 324 US 515, 535 (1945) 58 PUR NS 1; see, also, Jersey Central Power & Light Co. *v.* Federal Power Commission, 319 US 61 (1943) 48 PUR NS 129.

[27] Chairman Wolverton (Republican, New Jersey) of the House Committee on Interstate and Foreign Commerce (also a member of the committee when the original Natural Gas Act was passed) stated during the 1947 hearings on legislation similar to that now before Congress that such an amendment to the act would merely be carrying out "the original intent of Congress." He added (page 371):

> I confess that frequently there has come to my attention as a member of this committee, on which I served for so many years, action taken by Federal regulatory bodies on the basis of justification of the intent of Congress, that I have been astounded to realize the intent was so different in their opinion from what I knew would be the intent when the original act was passed. Probably it was due to lack of proper expression in the legislation. When you construe intent I know of no one who is better able to express an opinion as to that than those who assisted in the drawing of the particular piece of legislation . . .

The Toll of Deferred Maintenance

"Too *many men in management assume that American industry, on the whole, is marvelously equipped. This is due to the misconception that because a machine is still in good running order it is still a good machine. The fact is that the manufacturing plants of this country are still filled with machine tools of war and prewar vintage which have long since been obsoleted by postwar models and represent high-cost operation today. Delay in replacing these old machines by modern equipment that turns out more work for the consumer's dollar is a costly perpetuation of inefficiency.*

"Added to this is the assumption on the part of some labor leaders that new and better machines throw people out of work. This misconception, carefully fostered in the minds of machine operators, leads to resistance to the installation of new machines, or to limiting output on the new machine to that of the machine replaced. By failing to get out of new models the full measure of productivity that has been built into them, labor is not only defeating its own long-term objectives but adding an inexcusable burden on the consuming public."

—Tell Berna,
General manager, National Tool Builders Association.

How Atomic Power May Affect Electric Power Systems

It is now generally conceded that the impact of atomic fission on general business, commerce, and industry will probably take the form, in the beginning at least, of furnishing an alternative source of fuel for generating electricity by conventional methods. Here is a general discussion of the economic and technical possibilities which are presently discernible in the matter of applying atomic power to our electric power systems.

By WARD F. DAVIDSON*

Introduction

THIS article represents an attempt to analyze how and when the development of atomic power generation may affect electric power systems.

Power systems may be affected in three general ways:

1. Through the availability of new types of power plants which will supersede fuel - burning power plants and, possibly, halt the further development of water power.
2. Through the availability of simple small units for "private plants" that will meet the needs of large and small industrial customers at costs below those possible for power systems.
3. Through the development of some means for the direct conversion of nuclear energy into light or mechanical power, thus obviating the need for electricity.

Two of these can be disposed of rather promptly.

Starting with the last one, no means are now known, and none has been suggested, for the direct conversion of the energy released by atomic fission into light or mechanical power. The importance of electric power, whether generated in large central stations or in small isolated plants, remains unchallenged.

What is the outlook for small and moderate-size units suitable for supplying the power needs of the present commercial and industrial customers of power systems? The very small bulk of nuclear fuels should favor that type of plant, for it would reduce greatly many of the problems of fuel transportation and storage. The outlook is not bright, for there are serious obstacles, both technical and economic.

*For personal note, see "Pages with the Editors."

Among these are the low efficiency of nuclear fuel utilization or the need for more costly special nuclear fuels for small units as compared with large ones; the probably excessively high unit cost of control equipment for small units; the relatively great bulk and weight of the shields necessary to protect personnel and equipment from radiation; the hazard of having appreciable amounts of highly radioactive material in proximity to factory space, for no man-made device is entirely free from the danger of failure. While these reasons are not enough to dispose, for all time, of the isolated nuclear power plant, they seem sufficient to push it into a dim and uncertain future.

THIS brings us back to the possibilities of developing a nuclear power plant that will supersede fuel-burning power plants on electric power systems. The uncertainties here are so many and so large that it would be a venturesome person, indeed, who would attempt to offer detailed predictions. Considerable help in arriving at some estimate is possible, however, by listing the problems for which answers must be found if atomic power is ever to have an important influence on the national power picture. For some of these problems it will be possible to suggest the probable area in which the answer will be found; for many of them the uncertainties remain large.

The problems are, first, technical—for until a practical power plant has been built the rest has no reality; they are, second, economic—for large-scale use is hardly conceivable unless atomic power plants can produce power at costs competitive with other means. One might add that they are social and political—for, at least at the present time, much of the science and technology of nucleonics, or atomic energy, is subject to rigid control by Federal government agencies, and potential nuclear fuels are restricted by law to government use.

Some Basic Facts

No method is known, and none has been suggested by competent scientists, for the direct production of electric power from the energy released by nuclear fission. On the other hand, large amounts of heat—equivalent to many thousands of kilowatts — are now being carried off as waste from nuclear reactors used for the production of material for bombs. In one sense the technical problem is that of modifying the reactor so that the heat from it can be used in a turbine to drive an electric generator. This, however, is a great oversimplification. To get some understanding of its real character it will be necessary to review some fundamental considerations.

That certain changes within the nucleus or core of an atom could result in the release of amounts of energy large in comparison with those associated with chemical reactions such as combustion had been known since the discoveries of radioactivity and radium. However, these reactions gave little hope of providing useful sources of power both because the rate of reaction was comparatively slow and because the rate could not be controlled. In 1939, experiments showed conclusively that some atomic nuclei can split into two fragments of comparable mass with an accompanying release of a large amount of energy which ap-

peared chiefly as heat. In engineering terms, the release was about $4x10^{10}$ (forty thousand million) BTU per pound, or about three million times as much as from a pound of coal. This gave a new approach. Then, a few years later in a wartime laboratory, it was demonstrated that this "fission" process could be made a self-sustaining or a chain reaction. Until this very important step had been taken it had been about a case of keeping the fire going with matches, with a gross input of energy greater than the useful output. With a chain reaction a net useful output became a possibility. That this discovery had not been made earlier is further testimony to the fact that the fission chain reaction can take place only with a very few materials under very special conditions.

THE rearrangement of atoms that takes place in a chemical reaction does not change the identity of the atoms. An atom of carbon, for example, remains an atom of carbon whether it is free or combined with hydrogen or oxygen or some other element. The forces that hold the atoms of a chemical substance together are pictured as being almost entirely due to interactions between electrons that move, something like the planets of the solar system, about a central nucleus or sun. Most of the mass of the atom is concentrated in this nucleus, with considerably less than 1/1,000 part in the electrons.

In fission, on the other hand, the nucleus of the atom splits into two parts forming nuclei for two new atoms. If the original atom is U-235—that is the isotope, or species, of uranium atom with a mass of 235 units—the fragments might be krypton and barium, or some other pair with about the same total atomic weight. This is a fundamental difference from a chemical reaction and the one which explains the proportionally greater amount of energy that is released.

Greater importance, for the immediate discussion, attaches to another difference. Fission is initiated by a neutron—an electrically uncharged or neutral particle—entering the nucleus of a uranium atom. The neutron is the match or detonator that sets off the fission.

On fission the two parts of the original nucleus fly apart with tremendous velocities, and from one to three neutrons are ejected. It is these neutrons that we are most concerned with, for if conditions are right they may enter another uranium nucleus and so set off a new fission reaction. If, on the average, exactly one neutron from each fission causes a new fission, the rate will remain constant; if the average is larger or smaller than one,

¶ "No *method is known, and none has been suggested by competent scientists, for the direct production of electric power from the energy released by nuclear fission. On the other hand, large amounts of heat—equivalent to many thousands of kilowatts—are now being carried off as waste from nuclear reactors used for the production of material for bombs.*"

the rate will increase or decrease with corresponding rapidity.

At one limit the action becomes explosive, and the rate of energy release is so great that the temperature may be expressed in millions of degrees and the time in microseconds (millionths of a second); at the other limit the reaction ceases quite abruptly. The chief engineering interest lies, of course, in the mid-range or near the stable or constant rate condition. Reduction in the rate may always be achieved by inserting into the zone where the reaction takes place some nonfissionable material which will absorb neutrons and thus reduce the number which remains to produce further fission; increase in the rate of reaction may be harder to achieve.

Fundamental Design Problems

Some of the most difficult problems of nuclear reactor design arise in the imperative need to conserve neutrons so that an adequate supply will be available to maintain the chain reaction, with a small excess to permit control. There are several ways in which neutrons can be lost:

1. By escape from the reactor, for even the best neutron reflectors are only moderately effective.
2. By absorption by "impurities" in the materials of the reactor.
3. By absorption by U-238 without causing transmutation into neptunium.
4. By absorption by fission products.
5. By absorption by structural materials and heat-transfer fluids within the reactor.

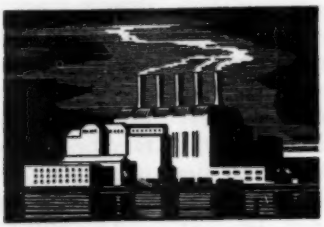
Loss of neutrons by escape is less, percentilly, for large reactors than for small ones, and is less for spherical reactors than for square or elongated ones. Also it is less for compact or high-density reactors than for low-density reactors where a smaller proportion of the space is filled with fissionable material.

Absorption of neutrons by "impurities" in the materials of the reactor may be large and sometimes necessitates taking very special precautions in the selection of materials.

Absorption of neutrons by U-238 is partially compensated for in some reactors by the transmutation that leads to the formation of Pu-239. This will be discussed later.

To limit the absorption of neutrons by fission products it is necessary to remove the fission products from time to time. As these will exist as an intimate mixture with the uranium, their removal requires taking the whole mixture—uranium and all—out of the reactor and subjecting it to complex chemical treatments to separate the waste from the unspent uranium which, for large-scale power, will be too valuable to throw away. Since the whole mixture is very radioactive, the processing plant must be designed for almost wholly automatic operation and to permit remote control of those operations which are not automatic. The chemical plant may be remote from the reactor, but the design of the reactor must provide suitable means for changing the charge of the active materials.

The need to limit neutron losses through absorption by the structural materials and the heat-transfer fluids places two heavy restrictions on the designer. For one, almost none of the common engineering materials is acceptable because of the high specific absorption or large "capture cross-section," and alternatives must be sought. For the other, the quantities



The Relative Cost of Atomic Generators

"A LARGE, *high-efficiency coal-burning power plant today will cost something like $190 per kilowatt. Of this, about one-half or, say, $100 per kilowatt would be needed for the part that would be duplicated in a nuclear power plant. There is not an adequate basis for a sound estimate of the other costs, but it may not be unreasonable to assume that they will be at least three times those of the coal-burning station.*"

of materials must be severely limited and this means using them at high stress.

The Problem of Materials

THE search for materials that meet these requirements is, in itself, a task of major magnitude. Even when the physicist has furnished data on the capture cross-sections of particular elements, only a start has been made. Few materials are suitable, in their pure state, for engineering application; most useful materials are alloys, just as steel is an alloy of iron and carbon with a number of other elements. Equally, small amounts of impurity may make the material useless for engineering purposes and, as we shall see, "impurities" may sometimes be formed within an alloy as a result of exposure to radiation. The investigation of these factors is both costly and time-consuming. After the metallurgical laboratories have developed some alloys that satisfy the first set of requirements, it becomes necessary to investigate suitable methods for production and fabrication on an engineering scale. Aluminum was hardly more than a laboratory curiosity until the Hall process was invented and commercial production became possible.

After a new material has been produced in trial processes the engineer must examine it to determine how it can be used. Just as a part to be made of cast iron must be differently shaped from one to be made from a chrome-nickel alloy steel forging, so one to be made from one of the new alloys—as yet unformulated — will require its particular shape and proportions, especially if the amount of material is to be kept at a minimum. Then the design and material, and the fabrication processes, must be verified to insure

adequate resistance to corrosion and to fatigue, for an unusually high degree of reliability is essential in reactor components.

And this brings up another group of problems. It is known in a general way that every material undergoes some change in its physical properties when subjected to neutron bombardment and radiation of the intensities existing in a nuclear reactor. However, only very limited data have been obtained, because adequate facilities for making the studies have not been in existence.

Moreover, the subject is a very complex one because in this case, again, it is not enough to study the behavior of pure metals; the alloys themselves must be studied. It was noted before, that most engineering materials are alloys, and it is emphasized that the valuable properties of alloys often depend on the amount and disposition of one of the minor alloying elements. For instance, the total of all the alloying elements in high-strength aluminum rarely exceeds 6 or 7 per cent, and yet the ultimate tensile strength of the alloy may be two or more times that of commercially pure aluminum. The tensile strength and resistance to fatigue and corrosion of such an alloy might be seriously impaired by the alteration in the silicon content due to radiation, even though 90 per cent or more of the aluminum remained unaffected.

The problems to be assigned to the metallurgists are, therefore, both numerous and formidable. Before we leave the subject of materials and turn to problems more in the field of engineering, we should not overlook the possibilities of help from the ceramics experts. Ceramics and glass, although among the oldest materials made by man, have been little used for engineering purposes until recently, and even now their potential uses are only partially understood. However, ceramics cannot be looked on as direct substitutes for metals. To realize their full potentialities, the engineer must be ready to make quite radical changes in his design.

Nuclear Fuels

Before proceeding to a consideration of some of the specific engineering problems of reactor design, we must divert to a short discussion of fissionable materials and nuclear fuels.

The technical problems of both the designer and the operator of fuel-burning boilers would be made much simpler if basic fuels such as coal were first converted into gas in a separate plant, about which the power man had no concern or worry. Of course, in a practical way, such a solution of troublesome problems is never possible, for the question of costs—the total costs—cannot be ignored. In much the same way power reactor design could be made far easier if the designer could contemplate the use of concentrated uranium-235 or plutonium-239 rather than natural uranium, which contains only 0.7 per cent of fissionable U-235 and about 99.3 per cent of nonfissionable U-238. Such a solution again evades the question of cost, and it also evades in some degree the question of adequate supply.

The early designs for atomic bombs contemplated the concentration of the U-235 in natural uranium, and several elaborate and costly "isotope separa-

tion" plants were built, mostly at Oak Ridge, for accomplishing this.

Experience with these processes has shown that the power requirements are so large that the amount of energy used in them is comparable to that available for power purposes in the finished product. Large-scale power production—which is our main interest here—if based on such methods would merely introduce a new step in the cycle and not result in any reduction in the use of coal, oil, natural gas, or water power. Clearly, such arguments as this are of minor importance for a limited number of special power applications, such as for the propulsion of navy vessels, and they are without force when considering bomb materials.

IT is very fortunate that the possibilities do not end here, and that nuclear reactions are known which give promise of making it possible to utilize the U-238 as well as the U-235. These reactions, as used in the processes for the production of bomb material, involve several steps. In the first step, a neutron released by the fission of an atom of U-235, after being slowed down by successive collisions with nuclear particles such as the nuclei of carbon atoms, enters an atom of U-238, which then becomes an atom of U-239. In the next step the U-239 emits a beta particle, or electron, to become an atom of neptunium-239, and then, by another like radioactive transformation, the Np-239 transmutes into plutonium-239. This end product is fissionable in the same way as U-235, and it can be used to "recycle" the process. Moreover, since more than one neutron, on the average, is released on the fission of each atom of U-235, the possibility exists, if the loss of the neutrons can be made small enough, that the number of new atoms of Pu-239 will be greater than the number of atoms of U-235 destroyed by fission, and that there may be an actual increase in the quantity of fissionable material, with the nonfissionable U-238 providing the substance or mass.

There is also an analogous series of nuclear reactions by which fissionable U-233 can be produced from nonfissionable thorium-232. These "breeder" reactions offer the hope of being able to increase the potential supplies of nuclear fuels by a factor of 140 or even more.

HOWEVER, as so often happens, this gain is not without its price. To get the maximum breeding of new fissionable materials, neutron losses must be kept to the very minimum, and this is incompatible with meeting the design requirements for a power reactor, particularly as to those for heat transfer and for control.

❦

¶ "IT *is known in a general way that every material undergoes some change in its physical properties when subjected to neutron bombardment and radiation of the intensities existing in a nuclear reactor. However, only very limited data have been obtained, because adequate facilities for making the studies have not been in existence.*"

General Reactor Design

With a tentative list at hand of materials that do not have large neutron capture cross-sections and that show adequate stability when exposed to radiation, and with some decision as to the kind of nuclear fuel to be used, the engineer may make a start by outlining a preliminary design.

Extreme compactness is essential to insure needed conservation of neutrons, and this means high rates of heat transfer and high mechanical stresses, both of which are incompatible with a high degree of reliability. Because of the extreme difficulty, which may amount in some cases to the absolute impossibility, of making repairs to a reactor after it has been put in operation and become radioactive, every practical means must be taken to insure against failure of any parts. But as perfection in this is unattainable, the design must make provision for some maintenance and repair work.

At this point we will return, for purposes of illustration, to the Hanford type of reactor, but keep in mind all the while that the final design may be for a quite different reactor.

In the Hanford reactors, uranium bars, sealed in closely fitting aluminum tubes, are inserted into other tubes which line holes running through blocks of graphite "moderator." Water is circulated through the annular space around the "slugs" and inside the tubes to carry off the heat. Although the total heat is equivalent to many thousands of kilowatts, it is not usable in a turbine because the temperature is too low.

A basic concept of great importance in designing heat engines—and steam or gas turbines are heat engines — is known as Carnot's principle. This states that the maximum efficiency at which any simple heat engine can transform heat into mechanical power is dependent on the range of temperature of the working fluid (steam or gas) according to formula[1] where T_1 is the initial (or higher) temperature and T_2 is the final (or lower) temperature. For this use the temperatures must be expressed on the absolute scale for which the numbers are 460 greater than for the Fahrenheit scale.

To see more clearly what this means, we may assume quite favorable conditions, as with cooling water from a river or lake available for condensers at 75 F. (535 R). With steam at 350 F. (corresponding to a pressure of 120 psig), the maximum attainable efficiency would be 25 per cent and the actual efficiency considerably below this figure because of unavoidable mechanical and heat losses. With air cooling, as would be used with many gas turbines, the final temperature might be above 300 F., and to attain an actual (rather than theoretical) efficiency of 25 per cent the initial temperature would have to be above 1,000 F.

One way to get higher temperatures from the Hanford reactors would be to reduce the flow of water until there was steam generation. This, however, is open to a number of very serious objections, prominent among which is the fact that the steam, because its density is lower than that of water, will have a lower specific absorption for neutrons and this difference may be

[1] The formula may be expressed as follows: Per cent efficiency $= 100 - \frac{100T_2}{T_1}$.

A Real Ash Disposal Problem

"THE disposal of radioactive wastes presents many problems for which solutions may be found only by distance from centers of population. This does not mean that the power plants must be located in remote regions for there is the possibility of shipment in suitably shielded cars or ships, but the costs of such operation cannot be ignored."

great enough to cause very serious disturbances in the operation of the reactor. Increasing the pressure so as to permit reaching higher temperatures without steam formation is not an immediately acceptable alternative, because this would necessitate thicker walls for the tubing and a greater weight of inactive metal in the reactor.

Heat Transfer a Problem

AN evaluation of possible heat-transfer fluids presents complex and difficult problems because of the many factors that are involved. Gilliland (*The Science and Engineering of Nuclear Power,* Volume I (book), chapter on "Heat Transmission," Addison-Wesley Press, Cambridge, Massachusetts, 1947) has made an interesting start. Taking into account various physical properties such as specific heat, thermal conductivity, density, viscosity, which influence heat transfer and the power necessary to circulate the fluid, he has developed two sets of parameters which give measures of the relative merits of different fluids. He then calculated the values of these parameters for 21 gases and vapors and for 15 liquids and molten metals. A study of these values and of data on neutron capture cross-section led him to select four media for further study. They are helium, water (in spite of the objections noted above), molten cadmium, and molten lead. Other investigators have added air and some eutectic mixtures involving lead.

The inclusion of molten metals in the list may seem strange because it is obvious that they cannot be used directly in a turbine or heat engine. The justification comes from the fact that a "2-stage" heat transfer system will probably be necessary in any case. With this system one fluid, which does not

vaporize, circulates through the reactor where it picks up heat and then through a steam generator or heat exchanger where it gives up that heat to make steam which will be used in a steam turbine to heat gas which will be used in a gas turbine. This arrangement has the great and overriding advantage of providing isolation of the turbine and its auxiliaries from the radioactivity which the fluid circulating through the reactor will acquire. Without it, turbine parts would soon become radioactive or so contaminated by radioactive materials that usual procedures for making operating adjustments and repairs would have to be replaced by others using remote control robot devices. It does not, however, wholly avoid problems of this kind for there must be pumps or blowers for circulating the fluid in the first circuit and these must tolerate the radioactivity.

BEFORE a final selection of the heat-transfer fluid can be made it will be necessary to reëxamine the question of structural materials and particularly those used in the active zone of the reactor. In addition to the requirements previously noted, the materials must meet some others. They must not be corroded or attacked severely by the heat-transfer fluid; they must have low specific neutron absorption; they must have adequate strength, especially at high temperatures; they must have adequate thermal conductivity; they must be capable of fabrication; they must have good stability when exposed to radiation. No common engineering material begins to meet all these requirements, which are sometimes conflicting, and progress in the development of power reactors is dependent in a large degree on the success of the metallurgists in meeting the challenge thus put to them.

Means for Replenishing the Charge

ANOTHER detail of reactor design that requires careful study is the means for removing the partially spent charge and replacing it with new active materials. The fission products are generally active neutron absorbers so that it is important that they not be allowed to accumulate unduly. Also depletion of the charge reduces the level of activity so that the chain reaction will cease before all the charge has been used up. In the Hanford reactors bars or slugs of uranium, in their aluminum cases, are removed from time to time and replaced by fresh ones. Such a process seems, however, to be ill-adapted to a power reactor and a continuous process of some kind would offer many advantages if it could be devised. Such a process might be looked upon as analogous to the continuous feed of coal in a stoker or in a pulverized coal burner which has replaced intermittent hand firing in modern coal-burning power plants. The partially spent charge would be sent to a chemical processing and reclaiming plant, as was noted before.

Control

BASICALLY, control of the reactor is accomplished by moving rods of neutron absorbing material into or out of the active zone. Cadmium has been generally used because it is a particularly effective absorber of neutrons and the control rods can therefore be small. Actually the control presents

many very difficult problems. The control of the neutrons so as to control the fission rate cannot be concentrated at one convenient point, but must be distributed throughout the reactor if local zones of excessive temperature are to be avoided. The control system must also be responsive to changes in neutron flux density which take place rapidly, and not depend wholly on temperature of the heat-transfer fluid or on changes in steam pressure which take place more slowly. Additionally, the control system must include a large number of instruments and detectors to give warning of failures of one kind or another, such as the development of leaks of heat-transfer fluid, or the escape of radioactive gas.

The control and protective systems will therefore require a large array of instruments and servomechanisms. Some will be of rather conventional type, possibly modified to give better life when exposed to radiation, but a large part will require new developments. That the problems can be solved is demonstrated by the successful operation of a number of large reactors used for the production of bomb materials, yet the opinion has been expressed in a recent paper (Cochran, D. and Hansen, C. A.—"Instrumentation for a Nuclear Reactor," Nucleonics, Volume 5, No. 2, pages 4-11, August, 1949), that finding a satisfactory solution may be crucial to the future of nuclear power.

Shielding

THE need for heavy shielding to protect personnel and equipment from injury or damage due to radiation has been mentioned in nearly every discussion of atomic energy. Gamma rays, which are similar to X-rays, and neutrons are the most difficult to deal with for they are not stopped completely by any thickness of shield, and the design must be based on a tolerable residual intensity. In designing the shielding for a reactor, a large amount of ingenuity is necessary to devise means for insuring the effectiveness of the shield and, at the same time, providing means for making connections, installing instruments, and so forth. Provision must also be made for essential maintenance operations.

The shielding problem, however, extends beyond the reactor. The heat-transfer fluid will become radioactive and, in turn, may induce radioactivity of somewhat less penetrating types in materials with which it comes in contact. Thus, the first heat-transfer circuit and all the equipment associated with it will require some shielding, again with provision for access for making maintenance repairs.

So long as the heat exchanger or steam generator does not develop any leaks, the tube walls will form an adequate barrier to isolate the steam or gas system, but it will be unsafe not to make some provision for dealing with the situation if a leak should occur.

¶ "THERE *appear to be no unsurmountable technical barriers to the development of large nuclear power plants, but it is by no means clear that such plants can offer anything like as great economic advantages as have often been predicted.*"

Steam Generator and Some Auxiliaries

THE steam generator itself presents some new problems. For one, the need for keeping to a minimum the volume of fluid in the first heat-transfer circuit points to the desirability of using high rates of heat transfer, and this, in turn, means that particular care must be taken to insure continued cleanliness of the surface and freedom from sludge and scale deposits. For another, it means that there must be carefully planned arrangements for treating the feed water and conditioning the boiler water. It means, too, provision of adequate facilities for inspection and periodic cleaning.

If molten metal is used as the heat-transfer fluid, provision must be made for draining the system on shutdown or for melting the metal in place when starting up. If air is used, attention must be given to the safe discharge back into the atmosphere, for there will be a moderate amount of radioactivity. Extensive studies dealing with this last problem are now under way at the Brookhaven National Laboratories (Beers, Norman R., *Stack Meteorology and Atmospheric Disposal of Radioactive Waste,* Nucleonics, Volume 4, No. 4, pages 28-38, April, 1949).

We now turn our attention to the power plant. What will it look like? There are no compelling reasons why the turbogenerators and the switchgear should differ greatly from those of fuel-burning power stations. Possibly they will be a little larger because of the advantages of large reactors, but that is about all. The real differences will be in the steam-generating equipment and the facilities for fuel handling.

Instead of large steam generators, often of impressive height, there will be a much smaller cubic reactor encased in a massive concrete and metal shield and another unit, the steam generator, in a less massive shield. There will be circulating pumps to handle the molten metal heat-transfer fluid or blowers if air is used. In either case, these will be large units, for present studies all indicate that the power requirements will be large because of the high velocity at which the fluids must be circulated through constricted passages. Boiler feed pumps will be conventional.

There will be no coal-handling equipment and no coal pulverizer; there will be no air preheaters; there will be no dust collectors; there will be no ash-sluicing or slag-tap system. Instead there will be massive containers, probably lead lined, for handling the partially spent charge and removing it to the distant—or near-by—chemical plant; there will be less massive containers for handling the replenishing charge.

The control room will be more elaborate than in the fuel-burning counterpart, and will have more interlocks and automatic features.

Costs

WHAT will this power plant cost? A large, high-efficiency coal-burning power plant today will cost something like $190 per kilowatt. Of this, about one-half or, say, $100 per kilowatt would be needed for the part that would be duplicated in a nuclear power plant. There is not an adequate basis for a sound estimate of the other costs, but it may not be unreasonable

to assume that they will be at least three times those of the coal-burning station. This gives a figure of $370 per kilowatt for the complete nuclear power station.

How will operating costs compare? The largest item for coal-burning stations is fuel. For the nuclear station the costs could conceivably be far lower, *if*—and this is an important "if"—ample supplies of uranium ores are found and *if* it is found possible to reduce greatly present costs of reclaiming and reprocessing the partially spent uranium. (At some later date, thorium may enter the picture as an alternative to uranium.) About the best that one can do now is to say that under present conditions uranium as a fuel for power plants is much more costly than coal, but at some later date it may become somewhat less expensive. As to other operating costs, it seems clear that until there has been extensive experience with nuclear power plants, labor, supervision, maintenance, and repair are all likely to be higher than for coal- or oil-burning stations.

Some Factors Influencing Costs

It must be kept in mind in any attempt to draw conclusions from these figures—and they are at best only the roughest sort of guess—that they have been set up on the assumption that the power plant was a single-purpose development. If, as seems not unlikely, power plants are built as part of a multipurpose development, then the allocation of common costs, which is to some extent quite arbitrary, may alter the picture.

There are, however, some additional considerations. In making a comparison of nuclear and fuel-burning power plants, it should not be assumed that they can be placed on sites equally advantageous with relation to the load. Until years of successful operation have proved their reliability, no prudent engineer would place a large nuclear power station in the heart of a large city or in densely populated or industrially very important areas. The ever present chance, however small, that something might go wrong and release large amounts of intensely radioactive material would dictate sites in areas where a failure would be less disastrous. This may necessitate added transmission, the costs of which must be considered.

The large size of nuclear power plants may operate to their disadvantage in regions of low-load density for no single small area such as a city may have enough load to justify such a station and adequate load could be found only by supplying other areas through a transmission system, the costs of which must be taken into account.

The disposal of radioactive wastes presents many problems for which solutions may be found only by distance from centers of population. This does not mean that the power plants must be located in remote regions for there is the possibility of shipment in suitably shielded cars or ships, but the costs of such operation cannot be ignored.

Almost regardless of what costs may be for nuclear fuels, the energy per unit weight is so great—about three million times that of coal—that shipping costs of the uranium will be practically negligible as compared with those for coal or petroleum or

transmission costs for natural gas. (This does not apply to the partially spent charge which must be handled in very heavy shields.) Therefore, in the absence of tariff barriers and artificial price control, the fuel cost will be the same at any place in the world. Aircraft and surface vessels might, in theory, be made free from the high price they must now pay for carrying their fuel with them.

This advantage must not be confused with one that has sometimes been claimed for nuclear power plants. It has been suggested that they offered particular advantages in areas where adequate supplies of condenser-cooling water were not available in lakes or rivers, but this does not meet the test of critical analysis. As a heat engine—a steam turbine or a gas turbine—is required in either a nuclear or a fuel-burning plant, the conversion efficiency will be influenced equally by the availability or lack of cooling water. Higher final temperatures mean lower efficiency, larger turbines, larger steam generators, larger reactors, and so forth, and they mean higher fuel consumption. All that can be said with certainty is that at some time in the future nuclear power plants may not be influenced as adversely as fuel-burning power plants by lack of natural cooling water supplies.

Summary

To summarize: There appear to be no unsurmountable technical barriers to the development of large nuclear power plants but it is by no means clear that such plants can offer anything like as great economic advantages as have often been predicted. In fact the outlook, as to costs, even if the enormous development costs were to be charged entirely to other projects, is such that one would not expect rapid large-scale inroads of nuclear power into the picture of industrial power production.

At most nuclear power plants *might* represent the bulk of the new capacity and thus be a supplement to rather than a substitute for power from coal, oil, gas, and water power.

"We believe it our duty to direct your attention to the activities of the Federal government tending toward the socialization of the electric power industry.

"While such activities have been under way for some thirty years, usual efforts are now being exerted to accelerate them and the government is presently considering the appropriation of large sums for the construction in various areas of generating plants and transmission facilities.

"The managements of electrical utility companies, generally, are doing what they can to protect their investors and their consumers from the adverse consequences of such government action.

"While there is as yet no direct threat of government competition in the area served by your company, if the present trend continues such competition may develop here as it has elsewhere."

—Stuart Cooper,
President, Delaware Power & Light Company, in a report to stockholders.

Financial News and Comment

By OWEN ELY

Depreciation—Factors And Ratios

WILL STANLEY, vice president of Southwestern Public Service, has written "A New Look at Public Utility Depreciation Reserves" for the *Analysts Journal* (third-quarter issue, page 15). He feels that the present rapid expansion program, and especially the wide variance in the degree of expansion between different companies, makes it worth while to review our ideas on the subject.

It is generally assumed by the companies, the regulatory commissions, and the accounting profession itself that the depreciation reserve is intended to retire all property items at the expiration of their useful life. This means that each item must be assigned a useful life expectancy, but since accurate records have not always been kept in the past it is frequently difficult to determine the exact expired life of the older properties. For this reason, Mr. Stanley points out, financial analysts have fallen into the habit of using rule-of-thumb tests of the adequacy of a depreciation reserve, by relating it to the gross property account, and then comparing the ratio with the average for all utilities. Another test is the ratio of the combined maintenance and depreciation expenses to revenues.

It is really an engineering job to analyze the adequacy of the depreciation reserve, and analysts lack the engineering knowledge as well as the opportunity to make such a study. Hence the use of rule-of-thumb ratios, which afford misleading conclusions in some cases.

As a practical matter, actual property retirements in most years and for most utilities are much less in dollar amount than the annual depreciation accruals. Also, it is generally true that electric utility companies spend considerably more for construction of new facilities each year than the amount of property retired from service in that year, so that there is a constant increase in both gross and net plant account.

Assuming an average 5 per cent increase in plant account per annum, with retirements equaling about 40 per cent of depreciation accruals, the reserve ratio would remain about constant. But the current rate of expansion is estimated around 8-10 per cent for all electric utilities, while utilities in certain sections of the Southwest and the Far West may considerably exceed this rate. Some companies now have plant account of which

DEPARTMENT INDEX

	Page
Depreciation—Factors and Ratios	40
Methods of Utility Financing Used in 1949	42
Wall Street Analyses of Utility Securities	42
Chart—Source and Disposition of Electric Operating Revenues 1945-9	43
Table — Dividend-paying Electric Utility Stocks	45, 46, 47
Table—Utility Reviews by Wall Street Firms	48

half or more represents construction within the last five or six years, while others contain a much smaller proportion of recently constructed facilities. Thus while a rapidly expanding utility may have an average reserve of only 14 per cent, *the portion of the reserve applicable to the older properties* may work out at about the same percentage as the over-all ratio for a company with only 5 per cent growth. (See accompanying table.) Mr. Stanley suggests the following statistical solution:

1. Select some reasonable period for which complete and accurate construction records are readily available.
2. Allow a reasonable accumulated depreciation for the newly constructed property.
3. Test the adequacy of the accumulated depreciation reserve by the percentage of the accumulated depreciation applicable to the older properties.

Proper compensation would thus be given for the "growth" factor, and fairer comparisons of the depreciation reserves could be arrived at as between the various companies in the electric industry.

UNFORTUNATELY, the average Wall Street analyst must leave even such a simple solution as that suggested by Mr. Stanley to the financial services and engineering firms which have adequate data and the necessary personnel to develop these yardsticks. But Mr. Stanley's emphasis on the age factor raises the possibility that more data may become available on the *average age* of the generating plants. Some prospectuses, but not all, show the year in which each generating plant was installed, as well as the effective capability and net station output (for a twelve months' period) of each plant. Any analyst who is willing to spend a few minutes' time with a slide rule can work out an *average age* for the entire plant, based on age weighted by output (or capacity if output is not available). The SEC should be persuaded that such data are important for the investor, in studying the adequacy of the depreciation ratios, and that they should be made available in every prospectus.

But of course generating plants are only about one-quarter or one-third of the total plant investment. Depreciation applies to almost the entire plant, excluding land. Another approach, therefore, would be to determine the increase in gross plant account during a certain period of years, to determine how much of the plant had been installed before and after a given year such as 1940 or 1945. Such comparison would have the advantage of including all kinds of property units, but on the other hand would be

	Plant Additions within Past 5 Years—Weighted Average Life of 2 Years	*Plant Additions Prior to Past 5 Years*	*Total Plant*
Company A, Slow Rate of Recent Growth			
Gross plant	$200,000	$800,000	$1,000,000
Accumulated depreciation	9,600*	190,400†	200,000
Percentage of accumulated depreciation to gross plant	4.8	23.8	20.0
Company B, Rapid Rate of Recent Growth			
Gross plant	$520,000	$480,000	$1,000,000
Accumulated depreciation	24,960*	115,040†	140,000
Percentage of accumulated depreciation to gross plant	4.8	23.96	14.0

*Rate of depreciation multiplied by weighted average expired life multiplied by dollar amount of plant constructed within five years.

†Total accumulated depreciation less portion applicable to plant additions within past five years, as computed in footnote above.

subject to errors, due to (1) varying construction costs in different periods of time, (2) arbitrary reductions in plant account at different times to eliminate write-ups, or reduce to an original cost basis; (3) retirement of large units of older property; (4) property sales and acquisitions. However, such a comparison, while by no means accurate, might afford some basis for a better appraisal of the rule-of-thumb depreciation ratios for different companies, along the lines suggested by Mr. Stanley.

Methods of Utility Financing Used in 1949

THE accompanying table is based on a report of the Public Service Securities Committee and is compiled from information in the *Investment Dealers Digest*. It includes all utilities, not merely electric utility companies. Total utility financing during the eleven months ending November 30, 1949, aggregated $2,642,000,000 compared with $2,495,000,000 in the corresponding period of 1948, an increase of 6 per cent. The volume of debt financing was 9 per cent below last year, but preferred stock issues showed a gain of 30 per cent in dollar amount, and common stock issues were up 175 per cent.

There were 302 separate issues this year compared with 219 last year—185 bond issues (of which, however, 107 were privately placed), 44 preferred stock issues, and 73 common stock offerings. Because of the huge size of the American Telephone and Telegraph financing, the percentages for kinds of security issue are shown in two ways:

Percentages:	*Includ. Am. T. & T.*	*Exclud. Am. T. & T.*
Debt Securities ..	74%	69%
Preferred Stocks .	9	10
Common Stocks .	17	21
	100%	100%

Wall Street Analyses of Utility Securities

KERR & Co., engineers, has prepared a special report on hydroelectric power companies which states "They have emerged from the wartime inflationary period without impairment of earning power and they would hold certain cost advantages in an era of rising wages and fuel costs . . . provided that other factors such as public competition, regulation, and rates charged for electricity were all favorable. . . . Stream flow, dependability, volume of water, and other factors are important and many low head plants are extremely efficient and have huge capacities."

It does not stress, however, the disadvantage under which many hydroelectric companies have suffered in recent years—there are a few exceptions, such as Idaho Power—the necessity of operating high-cost stand-by steam plants, or purchasing power from other utilities, when

METHODS OF UTILITY FINANCING JANUARY 1-NOVEMBER 30, 1949

	Millions of Dollars				
Method of Sale	*Debt Secur.*	*Pref. Stocks*	*Common Stocks*	*Total Secur. Mill.*	*Per Cent*
Sold competitively	$1,025	$ 74	$113	$1,212	46%
Negotiated	31	143	224	398	15
Dealer-manager basis	—	—	57	57	2
Offered stockholders**	394*	—	56	450	17
Sold privately	516	9	—	525	20
Total	$1,966	$226	$450	$2,642	100%

*American Telephone and Telegraph issue, offered to stockholders without underwriting.
**Without underwriting.

CLASSES A AND B PRIVATELY OWNED ELECTRIC UTILITIES IN THE UNITED STATES

SOURCE AND DISPOSITION OF ELECTRIC OPERATING REVENUES

SEPTEMBER

Federal Power Commission

a drought reduces the supply of stored water. In recent years this has resulted in considerable irregularity of earnings for some companies, partly because low water conditions coincide with high prices for fuel, and with a shortage of efficient steam capacity.

KERR & Co. gives statistics for twenty utility companies with substantial hydro power, and adds some brief engineering comment on each company, but without attempting any detailed earnings analysis. The list includes, in order of hydroelectric capacity:

Pacific Gas & Electric
Southern California Edison
Niagara Mohawk Power
Southern Company
Washington Water Power
Duke Power
Montana Power
New England Electric
New England Public Service
Union Electric
Carolina Power & Light
Puget Sound Power & Light
South Carolina Electric & Gas
Utah Power & Light
Idaho Power
California-Oregon Power
Portland Gas & Electric
Pacific Power & Light
California Electric Power

Kerr & Co.'s study of *International Utilities Corporation* is of special interest because of that company's stake in the Canadian oil and gas boom. The company controls two integrated natural gas subsidiaries, and its electric utility operates in Alberta, the fastest-growing area in Canada since the LeDuc field was discovered. Oil reserves in the Province are estimated at 1.5 billion barrels and natural gas at 6 trillion cubic feet. Natural gas deliveries in the International Utilities system increased 27 per cent in the last two years, while electric sales were up 36 per cent. Owned and dedicated reserves are considered ample. The company has been offered a half interest in a syndicate which is considering construction of a natural gas line to Winnipeg. It is participating in the oil boom through its 18 per cent interest in Anglo-Canadian oil. According to Kerr, "final 1949 earnings should reflect increased sales and a 13 per cent increase in rates for Canadian Western Natural Gas, effective July 1, 1949, and foreign exchange losses should be more than offset. Capitalization is well balanced and the financial position strong." The report includes five pages of printed text and a map of the properties.

UNION SECURITIES CORPORATION has prepared a 32-page brochure on *Texas Utilities Company* with numerous tables, charts, and a 2-page map. One of the charts uses a rather unique method of comparing changes in average residential consumption and revenues per kilowatt hour. The rate is represented on the vertical scale, and consumption on the horizontal scale. The lines showing the trend of these two figures for the subsidiaries of Texas Utilities are compared with those of Houston Lighting & Power, Gulf States, Central & South West, and Southwestern Public Service. The charts showing revenue percentage gains for 1948 compared with 1940 show that Texas Utilities has gained 106 per cent compared with 77 per cent for the industry. (Middle South gained 107 per cent, Central & South West 101 per cent, and Southern Corporation 94 per cent.) Conclusions reached are as follows:

(1) The territory served by the system has experienced a greater-than-average expansion in population and income, particularly income from oil and natural gas. (2) Industrial development has been exceptionally rapid during the last decade and most of it has been among small, diversified enterprises. (3) The system has a sound capital structure, which should enable it to raise needed construction funds on a favorable basis. (4) Earnings have consistently provided an adequate return on capital at rates to consumers which correspond closely to those of other companies in the Southwest. (5) Latest reported earnings do not represent a return on the present capi-

talization equal to that which has been typical of the system in the past. (6) The system should continue to grow in size and earning power, at a more rapid rate than the electric utility industry as a whole.

Several firms have issued descriptions of Niagara Mohawk Power, the newly merged operating subsidiary of Niagara Hudson Power. First Boston Corp., in its 8-page study, points out that the company and its subsidiaries will have revenues of $140,000,000 and capacity close to 2,000,000 kilowatts, so that it will rank among the five or six largest companies. Electric service will account for 89 per cent of revenues, and will be furnished at low rates through an interconnected network to a population of 2,750,000 including the cities of Buffalo, Syracuse, Utica, Schenectady, Albany, and Troy.

THE plant account, from which all questioned items have been eliminated, has a 31 per cent depreciation reserve. Capital structure will be approximately 50 per cent debt, 19 per cent preferred stock, and 31 per cent class A and common stock (combined).

DIVIDEND-PAYING ELECTRIC UTILITY STOCKS

		12/14/49 Price About	Indicated Dividend Rate	Approx. Yield	Share Earnings Cur. Period	Share Earnings Prev. Period	Share Earnings % Increase	Price-Earn. Ratio	% of Rev. Avail. For Com. Stock
Revenues $50,000,000 or over									
B	Boston Edison	45	$2.80	6.2%	$2.90d	$2.75	5%	15.5	11%
S	Cincinnati G. & E.	32	1.40	4.4	3.29s**	2.57**	28	9.7	13
S	Cleveland Elec. Illum.	42	2.20	5.2	2.77s**	2.48**	12	15.2	11
S	Commonwealth Edison	30	1.60	5.3	2.04s	1.73	18	14.7	10
S	Consol. Edison of N. Y.	28	1.60	5.7	2.35s	2.28	4	11.9	7
C	Consol. Gas of Balt.	67	3.60	5.4	4.73s*	4.21*	12	14.2	8
S	Consumers Power	34	2.00	5.9	2.54o**	2.37**	7	13.4	13
S	Detroit Edison	22	1.20	5.5	1.87o	1.45	30	11.8	8
C	Duke Power	83	4.00	4.8	8.19s	6.04	36	10.1	12
O	Niagara Mohawk Power	22WD	1.40	6.4	1.90s	—	—	11.6	—
S	Northern States Power	11	.70	6.4	1.11s	.89	25	9.9	13
S	Ohio Edison	32	2.00	6.3	2.82ag	—	—	11.3	14
S	Pacific G. & E.	33	2.00	6.1	2.20s*	2.47*	D11	15.0	8
S	Penn Power & Light	22	1.20	5.5	2.03o**	1.75**	16	10.8	9
S	Philadelphia Elec.	24	1.20	5.0	1.70s**	1.51**	13	14.1	12
S	Pub. Serv. E. & G.	25	1.60	6.4	2.38je	—	—	10.5	8
S	So. Calif. Edison	34	2.00	5.9	2.94s	1.84	60	11.6	7
S	Virginia Elec. Power	20	1.20	6.0	1.70o*	1.46*	16	11.8	9
S	Wisconsin Elec. Power	21	1.25	6.0	2.05s**	1.44**	42	10.2	8
	Averages			5.7%				12.3	
Revenues $25–$50,000,000									
S	Carolina P. & L.	31	$2.00	6.5%	$3.24o**	$2.73**	19%	9.6	13%
O	Central Ill. P. S.	17	1.20	7.0	1.56s**	1.44**	8	10.9	15
O	Connecticut L. & P.	58	3.25	5.6	3.81o**	3.21**	D16	15.2	12
S	Dayton P. & L.	30	1.80	6.0	2.67s**	1.99**	34	11.2	13
O	Florida P. & L.	19WD	1.20	6.3	1.98s	1.65	20	9.6	12
S	Houston L. & P.	47	2.20	4.7	3.84o**	3.29**	17	12.2	16
S	Illinois Power	36	2.20	6.1	2.96o**	2.69**	10	12.2	15
S	Louisville G. & E.	31	1.80	5.8	3.33s	2.66	25	9.3	12
O	New Orleans Pub. Ser.	35	2.25	6.4	3.16o	2.78	14	11.1	8
S	N. Y. State E. & G.	53	3.40	6.4	4.63o	3.81	22	11.4	8
O	Northern Ind. P. S.	18	1.20	6.7	2.15o**	1.84	17	8.4	11
S	Potomac Elec. Power	15	.90	6.0	1.19s**	.96**	24	12.6	11
S	Pub. Serv. of Colo.	47	2.60	5.5	4.68m	3.69	27	10.0	14
O	Pub. Serv. of Ind.	27	1.60	5.9	2.54o**	2.21**	15	10.6	17
O	Puget Sound P. & L.	13	.80	6.2	1.56o	1.73	D10	8.3	11
O	Rochester G. & E.	32	2.24	7.0	2.64s	2.79	D5	12.1	7
	Averages			6.1%				10.9	

	(Continued)	12/14/49 Price About	Indicated Dividend Rate	Approx. Yield	Share Earnings Cur. Period	Share Earnings Prev. Period	Share Earnings % Increase	Price-Earn. Ratio	% of Rev. Avail. For Com. Stock
Revenues $10–$25,000,000									
O	Atlantic City Elec.	19	$1.20	6.3%	$1.54o**	$1.42**	8%	12.3	12%
S	Birmingham Elec.	9	—	—	.72o	1.14	D32	12.5	4
O	Central Ariz. L. & P.	12	.80	6.7	1.26o**	1.09**	16	9.6	13
S	Central Hudson G. & E.	9	.52	5.8	.57s	.51	12	15.8	6
O	Central Ill. E. & G.	21	1.30	6.2	2.20s	2.11	4	9.5	11
S	Central Illinois Lt.	36	2.20	6.1	3.03o	2.88	5	11.9	14
O	Central Maine Power	17	1.20	7.0	1.54n**	1.04**	48	11.0	15
S	Columbus & S. Ohio El.	20	1.40	7.0	2.48s	1.99	25	8.1	13
O	Connecticut Power	34	2.25	6.6	1.87je	2.34	D20	18.2	11
S	Delaware P. & L.	21	1.20	5.7	1.88s**	1.40**	34	11.1	12
S	Florida Power Corp.	17	1.20	7.0	1.78s	1.52	17	9.6	11
S	Gulf States Util.	22	1.20	5.5	1.94o**	1.49**	30	11.3	17
C	Hartford Elec. Light	48	2.75	5.7	2.65je	—	—	18.1	14
S	Idaho Power	36	1.80	5.0	2.64s**	2.34**	13	13.6	19
S	Indianapolis P. & L.	29	1.60	5.5	3.16s**	3.01**	5	9.2	14
O	Interstate Power	8	.60	7.5	.83ag**	—	—	9.6	13
O	Iowa Pub. Serv. New	18	1.00	5.6	2.18o	1.56	40	8.3	9
O	Kansas Gas & Elec.	31	2.00	6.5	2.98o**	2.01**	48	10.4	12
S	Kansas Power & Light	17	1.00	5.9	1.56s	1.20	30	10.9	14
O	Kentucky Utilities	14	.80	5.7	1.49s**	1.17**	27	9.4	12
O	Minnesota P. & L.	29	2.20	7.6	3.66s	—	—	7.9	14
O	Montana Power	20WD	1.40	7.0	2.38ag	2.32	3	8.4	25
C	Mountain States Power	32	2.50	7.8	3.81s**	4.06**	D6	8.4	12
O	Oklahoma G. & E.	39	2.40	6.2	3.48s**	2.97**	17	11.2	14
O	Portland Gen. Elec.	23	1.80	7.8	1.82o**	2.09**	D13	12.6	14
O	Pub. Ser. of N. H.	24	1.80	7.5	1.87o**	1.48	26	12.8	12
O	San Diego G. & E.	13	.80	6.2	1.02o**	.80**	28	12.7	6
S	Scranton Elec.	13	1.00	7.7	1.07o	1.16	D9	12.3	14
S	So. Carolina E. & G.	10	.60	6.0	1.39s	.87	60	7.2	10
O	Southwestern Pub. Serv.	34	2.20	6.5	2.75s**	2.42**	14	12.4	22
C	Tampa Electric	33	2.00	6.1	2.72o	2.05	33	12.1	12
O	United Illum.	44	2.25	5.1	2.60d	2.56	2	16.9	16
C	Utah Power & Light	23	1.60	7.0	2.25o	1.82	24	10.2	16
O	Western Mass. Cos.	32	2.00	6.3	2.30d	2.41	D5	13.9	12
O	Wisconsin P. & L.	17	1.12	6.6	1.54s	1.35	14	11.0	11
	Averages			6.4%				11.4	
Revenues $5–$10,000,000									
C	California Elec. Pr.	8	$ .60	7.5%	$ .85s	$ .76	12%	9.4	10%
O	Calif. Oregon Power	23	1.60	7.0	2.19o**	1.87**	17	10.5	17
O	Central Vermont P. S.	9	.68	7.6	.62s	.29	114	14.5	6
C	Community Pub. Ser.	33	2.00	6.1	4.06s	3.90	4	8.1	12
O	El Paso Electric	34	2.00	5.9	3.41o	2.96	15	10.0	20
S	Empire Dist. Elec.	18	1.24	6.9	2.19s	2.38	D8	8.2	11
O	Gulf Public Service	11	.80	7.3	1.39n**	1.26**	10	7.9	13
O	Iowa Southern Util.	17	1.20	7.1	2.41o**	1.57**	54	7.1	8
O	Lawrence G. & E.	36	2.60	7.2	2.41d	2.48	D3	14.9	9
O	Lynn G. & E.	86	5.00	5.8	5.02d	5.87	D14	17.1	16
O	Madison Gas & Elec.	26	1.60	6.2	1.56ag	—	—	16.7	12
O	Michigan Gas & Elec.	21	1.60	7.6	2.33s	1.96	19	9.0	9
O	Missouri Utilities	15	1.00	6.7	1.65s**	1.55**	6	9.1	12
O	Northwestern P. S.	10	.80	8.0	1.18s	1.29	D9	8.5	11
O	Otter Tail Power	20	1.50	7.5	1.94s	1.24	56	10.3	9
C	Penn Water & Power	35	2.00	5.7	4.81d	4.32	11	7.3	24
O	Public Ser. of New Mexico	18	1.00	5.6	1.79s	1.57	14	10.1	14
O	Rockland L. & P.	9	.60	6.7	.64s	.60	6	14.1	12
O	Southern Ind. G. & E.	23	1.50	6.5	2.18o**	2.03**	7	10.6	15
O	Tide Water Power	8	.60	7.5	.98o**	.88**	11	8.2	7
O	Western Lt. & Tel.	26	2.00	7.7	2.45s**	2.02**	21	10.6	10
	Averages			6.9%				10.6	

	(Continued)	12/14/49 Price About	Indicated Dividend Rate	Approx. Yield	Share Earnings Cur. Period	Share Earnings Prev. Period	Share Earnings % Increase	Price-Earn. Ratio	% of Rev. Avail. For Com. Stock
	Revenues under $5,000,000								
O	Arizona Edison	18	$1.00	5.6%	$2.66s	$1.30	105%	6.8	8%
O	Arkansas Missouri P.	14	1.00	7.1	1.99s	2.07	D4	7.0	14
O	Bangor Hydro Elec.	25	1.60	6.4	2.27s	2.16	5	11.0	15
O	Beverley G. & E.	35	2.40	6.9	2.10d	2.19	D4	16.7	6
O	Black Hills P. & L.	16	1.20	7.5	1.96o	2.00	D2	8.2	13
O	Calif. Pacific Util.	28	2.40	8.6	3.38s	4.29	D21	8.3	9
O	Central Louisiana El.	30	1.80	6.0	3.77s**	2.24**	68	8.0	18
O	Central Ohio L. & P.	28	1.60	5.7	2.72s**	2.44**	11	10.3	10
O	Citizens Utilities	11	.70&Stk	6.4	1.81s**	1.46**	24	6.1	12
O	Colorado Central P.	28	1.80	6.4	2.58s**	2.07**	25	10.9	11
O	Concord Electric	35	2.40	6.9	2.17d	2.30	D6	16.1	11
O	Derby G. & E.	20	1.40	7.0	1.25d	1.47	D15	16.0	10
O	East Coast Electric	20	1.20	6.0	1.44je**	1.64**	D12	13.9	14
O	Fall River Elec. Lt.	52	4.00	7.7	3.55d	3.32	7	14.6	16
O	Fitchburg G. & E.	42	2.75	6.5	2.68d	2.85	D6	15.7	11
O	Frontier Power	4	.20	5.0	.84d	1.14	D26	4.8	10
O	Haverhill Elec.	27	1.00	3.7	1.10d	1.48	D26	24.5	6
O	Lake Superior Dist. P.	23	1.40	6.1	3.46s	1.51	129	6.6	5
O	Lowell Elec. Lt.	41	3.00	7.3	2.73je	—	—	15.0	9
C	Maine Public Service	14	1.00	7.1	1.51o	.62	144	9.3	9
O	Michigan Public Ser.	21	1.40	6.7	2.33s**	1.52**	53	9.0	8
O	Missouri Edison	8	.70	8.8	.91s	.94	D3	8.8	9
C	Missouri Public Ser.	32	1.60	5.0	3.92d	4.21	D7	8.2	13
O	Newport Elec.	25	1.80	7.2	2.45my	2.66	D8	10.2	11
O	Sierra Pac. Power	23	1.60	7.0	2.00o	2.07	D3	11.5	13
O	Southern Colo. Pr.	10	.70	7.0	1.26ag**	1.12**	13	7.9	14
O	Southwestern El. Ser.	12	.80	6.7	1.36ag	1.25	9	8.8	14
O	Tucson Gas, E. L. & P.	21	1.40	6.7	2.35s	1.65	42	8.9	16
	Averages			6.6%				10.8	
	Averages, five groups			6.4%				11.2	
	Canadian Companies†								
C	Brazilian Trac. L. & P.	19	$2.00	10.5%	$3.85d	$3.69	4%	4.9	—
C	Gatineau Power	18	1.20	6.7	1.26d	1.63	D23	14.3	—
C	Quebec Power	17	1.00	5.9	1.14d	1.21	D6	14.9	—
C	Shawinigan Power	24	1.20	5.0	1.58d	1.63	D3	15.2	—
C	Winnipeg Electric	36	1.40	3.9	1.81d	1.96	D8	19.9	—
	Integrated Holding Companies								
S	American Gas & Elec.	50	$3.00	6.0%	$4.28o**	$3.85**	11%	11.7	—
O	Amer. P. & L. Reclassified	16WD	.90E	5.6	1.37je	—	—	11.7	—
S	Central & South West	14	.90	6.4	1.33s**	1.20**	11	10.5	—
S	Middle South Util.	18	1.10	6.1	1.90ag	—	—	9.5	—
S	New England El. System	11	.80	7.3	1.22m	—	—	9.0	—
O	New England G. & E.	14	.90	6.4	1.47o**	1.18**	25	9.5	—
S	Southern Co.	12	.80	6.7	1.31o	.85	54	9.2	—
O	Texas Utilities	20WD	1.12	5.6	1.97ju	—	—	10.2	—
S	West Penn Elec.	24	1.80	7.5	3.40s	3.15	8	7.1	—
	Averages			6.4%				9.8	
	Other Electric Holding Companies								
S	General Pub. Util.	17	$1.00	5.9%	$1.85sPF	—	—	9.2	—
S	North American	20	1.00	5.0	1.40sPF	—	—	14.3	—
C	Philadelphia Co.	17	.70	4.1	1.04s	.88	18	16.3	—
O	West Penn Power	33	1.40	4.2	2.41s**	2.36**	2	13.7	—

B—Boston Exchange. C—Curb Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. E—Estimated. WD—When delivered. *Based on average number of shares outstanding. **Based on present number of shares outstanding. †—While these stocks are listed on the Curb, Canadian prices are used. a—April. ag—August. d—December. f—February. j—January. m—March. my—May. je—June. ju—July. s—September. o—October. n—November. PF—*Pro forma.*

UTILITY REVIEWS BY WALL STREET FIRMS*

Company Analyses	*Firm*	*No. Pages*	*Month*
American Power & Light	Kerr & Co.	4	Nov.
Do	Schoellkopf, Hutton	2	Nov.
Do	L. F. Rothschild	1	Nov.
Do	Loeb, Rhoades	2	Nov.
Do	L. F. Rothschild	2	Nov.
Central Hudson Gas & Elec.	Eastman, Dillon	7	Sept.
Central Illinois Light	Morgan Stanley	7	Sept.
Consolidated Edison	McDonnell & Co.	6	Sept.
Commonwealth Edison	Kerr & Co.	4	Aug.
Consumers Power	Morgan Stanley	7	Sept.
Electric Bond & Share	E. F. Hutton	4	Aug.
Do	Sartorius & Co.	2	Sept.
Do	Argus Research	3	Oct.
Florida Power & Light	Josephthal	4	Nov.
Do	L. F. Rothschild	1	Nov.
Do	Loeb, Rhoades	2	Nov.
International Utilities	Kerr & Co.	6	Dec.
Iowa Power & Light	Josephthal	4	Nov.
Middle South Utilities	Eastman, Dillon	9	Oct.
Minnesota Power & Light	L. F. Rothschild	2	Nov.
Do	Loeb, Rhoades	2	Nov.
Montana Power	L. F. Rothschild	1	Nov.
Do	Loeb, Rhoades	2	Nov.
New England Public Service	Ira Haupt	7	Oct.
Niagara Mohawk Power	Schoellkopf, Hutton	2	Nov.
Do	First Boston	8	Nov.
North American	Gerstley, Sunstein	1	Aug.
Nor. Indiana Public Service	Geyer & Co.	4	Aug.
Ohio Edison	Morgan Stanley	7	Sept.
Do	Josephthal	2	Nov.
Portland General Electric	Kerr & Co.	4	Sept.
Southern Company	Eastman, Dillon	6	Oct.
Do	Kerr & Co.	4	Sept.
Do	J. & W. Seligman	23	Sept.
Do	Loeb, Rhoades	8	Sept.
Tennessee Gas Transmission	Kerr & Co.	4	Oct.
Texas Utilities	L. F. Rothschild	2	Nov.
Do	Loeb, Rhoades	8	Nov.
Do	Stern, Lauer	2	Nov.
Do	Union Securities	32	Nov.
United Light & Railways	Gerstley, Sunstein	1	Aug.
Do	Goldman, Sachs	3	Aug.
Do	Kalb, Voorhis	—	Oct.
West Penn Electric	Argus Research	2	Sept.
Wisconsin Power & Light	Josephthal	4	Oct.
General Reviews, Etc.			
Monthly Bulletin	Eastman, Dillon	—	Dec.**
Do	Reynolds	3	Dec.**
Do	Josephthal & Co.	4	Dec.**
Tabulation of Electric Utilities	First Boston	7	Dec.
Comparative Data—Electric Utility Companies in Regional Groupings	Loeb, Rhoades	8	Nov.
Hydroelectric Power Companies	Kerr & Co.	6	Nov.
Public Utility Equities	Baker, Weeks	6	Sept.
Natural Gas to New England	Baker, Weeks	6	Sept.

*Similar lists appeared in the FORTNIGHTLY of September 1st, May 26th, and March 17th; and in 1948 in the December 16th, September 9th, June 3rd, and March 11th issues.
**Latest issue.

What Others Think

Utility Outlook and Review

It appears that the adage, "Past Is Prologue," might well be kept in mind in any prediction of the course the majority of the utilities will steer during the coming year. Since most of the important segments of the utility field are so closely geared to the progress of industry as a whole, a preponderance of "status quo" forecasts on the part of business analysts seems to warrant an optimistic outlook. However, words of caution and qualification always seem a necessary part of any sound "crystal gazing" and consequently before embarking on any "preview through review," one should consider such words, especially when they come from that important location in the business scene—the financial quarter.

The Northern Trust Company of Chicago, in its December issue of *Business Comment*, sees liberal instalment credit terms—which came into existence last June 30th when the Federal Reserve Board regulations were relaxed, as having a long-term unstabilizing effect on the economy of the country. Its near-by effect should be one of sustained prosperity.

This prosperity will depend on two factors: (1) eventual satisfaction of customer demand and (2) a natural stopping point beyond which future income cannot be committed.

According to the bank letter, the capital money market is always a good business barometer, although its 1949 fluctuations were in direct contrast to general business trends. It is stressed, however, that any constant falling off of security issue volume, unless offset by other factors, may indicate that business has stopped expanding and may be headed for a decline. Specific reference is made to the position of the utilities in this matter of capital outlay.

In a breakdown of the flotations by industrial origin the report notes that offerings of the public utilities—electric, gas, and telephone—totaled $2.2 billion and constituted 50 per cent of the new capital issues in the first ten months of this year. This figure was slightly larger than a year ago and 1½ times as large as two years ago. The expectation, according to the business report, is that utilities will be in the market for a substantial volume of funds to finance large plant expansion programs. Since June a falling off of this type of issues has been noted, but it is attributed to the fact that higher depreciation charges on expanded plant and larger earnings are allowing the utilities to finance a great portion of their needs from internal sources.

The equity capital problems of the utility industries may be easing in that a larger proportion of new money was raised through the sale of preferred and common stocks during the past year (24 per cent as compared with 15 per cent in 1948). It seems that three factors have atracted the investor to these issues: (1) the cessation of inflationary pressures, (2) better earnings on the part of the utilities, and (3) good yields on the stock issues. It would also seem from the points noted in the Northern Trust bulletin that the utilities will continue to play their important rôle in the corporate security issue picture during the foreseeable future.

The Electric Power Industry

The optimistic note regarding utility stock financing is echoed in the annual report of the status of the electric power industry issued by the Edison Electric Institute's President Elmer Lindseth when he says: "Common stock financing met with encouraging success

during the year." The utility head traces the financial activities of the industry by saying that during the year the business-managed electric companies successfully passed the halfway mark in the financing of their postwar expansion program. In the four years ending December, 1949, about $5.8 billion were raised.

A breakdown of this figure shows that about two and one-half billion came from internal sources, principally accruals to depreciation reserves and earnings retained in the business, and three and one-third billion from the sale of securities.

The security financing is further broken down to show that two and one-quarter billion dollars of the new financing came from the sale of bonds, about five hundred million from the sale of preferred stocks, and about five hundred and sixty million from the sale of common stocks.

Three and nine-tenths billion dollars will be required to carry out the expansion program through 1950 and 1951 as planned. About one and one-quarter billion will come from internal sources, and two and three-quarter billion dollars are expected to come from the sale of securities.

In an over-all appraisal of the industry's progress during 1949, Mr. Lindseth notes that the electric light and power industry, despite disturbing political and economic crosscurrents in the nation, made noteworthy progress. Generating capacity installed reached an all-time high. Reserve margins of generating capacity doubled. Financing on the largest scale ever undertaken in any one year was successfully accomplished. Electric production and sales obtained record levels. Forty-three million customers (representing a 2,000,000 increase over 1948) are now being served. Ninety-five per cent of America's occupied homes now have electric service—it is readily available to all but 2½ per cent.

EARNINGS were improved in the face of high construction and fuel costs and high wages. The three primary factors accounting for the increased earnings are noted as: (1) rate increases, (2) improvement in operations, and (3) greater fuel efficiency of new generating plants. A residential customer experienced a decrease in the average price of electricity from 3.01 cents per kilowatt hour to the all-time low of 2.96 cents. Coal consumption per kilowatt hour dropped from an average of 1.3 pounds of coal to 1.2 pounds of coal—representing a 7½ per cent improvement in fuel efficiency.

The major achievement was the installation of a grand total of 6,750,000 kilowatts of effective generating capacity, topping by 50 per cent the 1948 high mark. Reserve margins of generating capacity doubled—from 6 per cent to 12 per cent.

A large part of the new customers came from the continued large expansion in rural areas. New construction of private dwellings also accounted for this increase. About three-fourths of the farm expansion occurred on the lines of the REA coöperatives and about a quarter were connected to electric company lines. As a result of this real expansion about 85 per cent of the farms in the country have electricity today.

SALES of electricity moved up in the commercial and residential markets. Only street railway and electrified steam railroads showed a decline. The gross revenues of the business-managed electric companies attained a new high of $4,150,000,000, which represents a 6½ per cent gain over the previous record year of 1948. The aggregate net income of electric companies was about $775,000,000—an increase of $105,000,000 over the net income of 1948. Total fixed capital increased by $2,075,000,000 over the previous year, making a total investment in plant and equipment by the electric companies of approximately $20 billion.

Expenses, likewise, increased, with wages and salaries being the largest item. This labor expense amounted to $870,000,000, $50,000,000 more than in 1948. Twenty per cent of the electric companies' revenue, or $820,000,000, was paid out in taxes of various kinds. The cost of fuel

"WILL YOU PLEASE WIRE A POKE IN THE SNOOT . . . COLLECT?"

slipped from second to third place on the expense list, accounting for $710,000,000 compared with $778,000,000 in 1948. Increased fuel efficiency of new generating plants was generally acknowledged to account for this saving.

It is expected that plant expansion expenditures by the business-managed electric companies will amount to $2.1 billion during 1950. This will represent additional generating capacity totaling 5,060,000 kilowatts, compared with an installation of approximately 5,580,000 kilowatts in 1949. In 1951, an addition of 4,850,000 kilowatts is anticipated.

In commenting on the progress of the industry, the EEI president stresses the threat of Federal socialization of the electric power industry. He points out that the taxes paid by the electric companies are paying, in part, the cost of these Fed-

eral power ventures. He describes this situation as contrary to sound principles of economics and democratic government —especially so since the Federal power systems operate without paying any taxes. Despite this Federal encroachment the industry sees a tremendous weight of evidence in its favor—in the confidence of its customers, its employees, its investors, and the general public.

The Gas Industry

THE rate of the mushroom growth of the gas industry at the year's end can mean only one thing—its impetus should send the boom far through the coming year and perhaps even through the next few years. The high-powered spark plug in the gas industry machinery—the natural gas industry—is probably solely responsible for the 500,000 increase in gas customers noted in the industry during the last year.

Hugh H. Cuthrell, president, American Gas Association, has recently issued a report on the gas industry's progress during the year 1949.

Today, natural gas alone supplies nearly 15 per cent of the energy of the country. Revenues are up. The total of $1,097,328,000, the total natural gas revenues for the year 1949, is 10.3 per cent greater than the previous twelve months. Total revenues for the industry as a whole amounted to $1,579,603,000, a 7.3 per cent increase. This is a new high for the gas industry. The natural gas branch has shown the greatest increase in customers, sales, and revenues. More than 700 companies are supplying natural gas to 11,500,000 customers in 5,200 communities in 35 states. The 13 states, not now being served, with the exception of Nevada, will soon have natural gas from pipelines now in the planning stage.

National attention is being focused on the phenomenal growth and expansion of the natural gas branch of the industry. Last year the Federal Power Commission authorized construction of about 8,500 miles of a new pipeline, bringing the total of natural gas pipelines in the United States to approximately 260,000 miles. Applications now pending before the FPC request additional lines which will cover approximately 15,000 miles.

In one instance, an estimated outlay of $189,000,000 financed a 1,840-mile pipeline from Texas to New York city. The encouraging outlook for the natural gas industry is further substantiated in what amounts to "an expansion of an expansion"—pipelines that have been extended in recent years already are applying for additional capacity to accommodate the ever increasing load.

The all-important question of supply has a likewise encouraging answer. On December 31, 1948, the reserve committee of the American Gas Association and the American Petroleum Institute estimated that proved natural gas reserves in the United States were 173.87 trillion cubic feet. This reported a gain of almost 8 trillion cubic feet above the estimates of the year before despite record consumption based on the unprecedented demand. Reserve figures have advanced more than 700 per cent since 1925 and more than 230 per cent in the past ten years.

BROAD-SCALE economic studies on the part of AGA are plotting the course of the gas industry and assisting in long-range planning. One of these studies was a resurvey of the anticipated construction expenditures of the gas utility industry. It was indicated in this study that the industry expects to expend $3.5 billion on new facilities during the 5-year period—1948-1952. The largest single class expenditure will be devoted to natural gas transmission equipment, which is expected to account for $1.8 billion or 52 per cent of the total gas industry expenditures. Distribution, production, and the storage facility construction will amount to $1.2 billion, making a total of $3 billion for the natural gas branch. So far, the industry has expended $770,000,000 in 1948 and $940,000,000 in 1949 in carrying out the expansion program.

Officials of the industry predict that the total assets attributable to the gas industry should expand from the $7.5 billion figure of 1948 to $10 billion by the

end of the 5-year period. Every report indicates that the industry will reach its goal.

The financial world is rallying to the support of the industry's aspirations in every possible way. Public statements on the part of financial leaders and companies serve as good criteria on which to base an optimistic outlook on the part of the gas industry.

Some of them are as follows:

H. C. Wainwright & Company: "The future holds great promise for the gas industry. There is nothing in sight which could interrupt the growth of the industry and impair its earning power for a number of years."

Fitch survey: "Human ingenuity combined with enormous natural resources has made the natural gas industry one of the wonders of our industrial age. It is clear that natural gas is destined to become one of the most important factors in the industrial development of the nation."

The record of the industry, its plans for reaching into untapped markets, and the zest and enthusiasm of its employees present, indeed, a hopeful note for the future of the gas industry in all of its branches.

The Transit Industry

IT is generally acknowledged that, with the possible exception of the telegraph industry, the transit companies are faced with the most serious financial problem during the coming year. According to Guy C. Hecker, executive manager of the American Transit Association, "there evidently is no panacea for the ills that have beset the transit industry. Each situation is being solved in the light of its own particular conditions. Transit companies, while seeking additional revenues through increases or adjustments in fare structures, are also making every effort to stabilize and ultimately reduce operating costs."

In the light of the situation the transit executive reports that transit managements are charting their respective courses with an eye on business trends, industry production, employment, and other basic factors that influence the volume of transit riding. The plans being formulated in all cases consider the maximum level of service that the public has the right to expect.

The transit association reports that, despite expected postwar readjustments, the urban transit industry, after five years, is still carrying 46 per cent more passengers than the average of the years 1936-1940, with an estimated total of 19 billion for 1949. Although this figure is 11 per cent lower than 1948, the rate of decline appears to be gradually leveling off. Some idea of the magnitude of the job the transit industry is doing is seen in the week-day breakdown of the 19 billion fares. The nation's streetcars, trolley coaches, busses, and subway systems, each weekday, carry about 63,000,000 riders—a number equal to the combined population of Great Britain and Canada.

The industry is expected during 1950 to continue along this practical line of a solution to its financial problems by reducing operating expenses wherever possible. Evidence of this practical approach is seen in an analysis of the industry's financial picture in a comparison of the two years—1948 and 1949. It is pointed out by Mr. Hecker that, despite the 11 per cent loss of riders, fare increases kept the industry's operating revenue at $1,490,000,000—a fraction of 1 per cent above those of 1948. Operating expenses, including depreciation by taxes, have been reduced in 1949 by approximately 1.5 per cent to a figure of $1,324,000,000. Net revenue in 1949, according to these preliminary estimates, was approximately $166,000,000 or 14.52 per cent higher than in 1948.

EQUIPMENT needs have not been neglected, despite poor net earnings during the last six years, inasmuch as transit companies have purchased nearly 44,000 new vehicles to replace almost half the total vehicles in the industry. Streetcars and subway cars purchased in that period totaled 3,100; electric trolley coaches 3,500; and busses 37,000.

A trend toward trolley coaches and busses is seen in a classification breakdown of the total vehicle figure—16,100 surface electric railway cars are now estimated to be in use, a decrease of about 41 per cent since 1944; 6,000 trolley coaches, an increase of 68 per cent since 1944; and 59,000 busses, an increase of 22 per cent since the same year. The vehicles purchased in the recent years, generally, are of greater seating capacity and actually have added to the number of seats for the riders.

Any appraisal of the transit industry must necessarily give serious consideration to the employee phase. Fifty-five cents of each transit dollar is paid out to the employees in wages. In the electric power industry, as a contrasting example, labor accounts for only 22 per cent of costs. In 1949, the 254,000 workers in the transit industry received total wages of $815,000,000. In 1948, 261,000 employees were paid $829,000,000. Although the total payroll in 1949 was lower than in 1948, because of fewer employees, the average wage received in the industry rose from $3,176 to $3,208. This 1949 payroll figure represents an increase of 131 per cent over the prewar period. From this it would appear that any future reductions in transit operating costs would depend, to a great extent, on the future policies of the labor segment of the industry.

VARIOUS solutions to the over-all problems in the industry are being presented. According to Mr. Hecker it is felt that solutions to the more pressing problems are being found. They are being weighed in the light of the following:

(1) The industry realizes that fare increases alone won't solve the problem, although they have helped. In some cities it might be necessary to adopt fare structures in which the price of a ride will be related, at least roughly, to the distance traversed, if short-haul riding is to be retained.

(2) Controllable operating costs will have to be cut wherever possible.

(3) Relief by local authorities from some of the wide range of special taxes and imposts now paid by transit companies would be extremely helpful and, in some instances, might make unnecessary future fare increases. The tax relief would be directed toward the many local taxes and assessments that are imposed upon other businesses. These special taxes must be paid by the riders in higher fares. Although the public, as a whole, probably benefits, these riders are usually those who can least afford extra taxes.

(4) The industry is becoming more aware of the fact that it has a "story to tell" to the riding public, the regulatory authorities, and to the Federal, state, and local authorities. A campaign to tell this story has been initiated by the association and the first effort along this line was seen in the "Transit Progress Day" activities of the industry on September 12th of the past year. Several hundred leading transit companies participated in this observance at the local level with "open house" parades of old and new transit equipment, speeches before business and civic groups, radio talks, and newspaper advertising. Results of this initial step were gratifying to the industry as a whole and plans are under way for making the event an annual occurrence.

Although the transit picture, as a whole, is not an optimistic one, it appears that the recognition by the industry of its many problems and the practical approach to their solution—which are beginning to show encouraging results—may combine to make the coming year one of encouraging accomplishment.

The Telegraph Industry

THE year 1950 may bring the telegraph industry much needed relief in the form of excise tax repeal. This relief appears to be the "one last hope" short of government acquisition.

A determined effort on the part of the Western Union Telegraph Company to deal with its problems as best it can under the present conditions is seen in the re-

port of its net income for October, 1949. The company reports that its net income for this period amounted to $68,606 compared with a deficit of $305,668 in October, 1948. The improvement, according to the report, reflects savings resulting from mechanization and expense control measures despite the fact that the company experienced a decline of $925,324 in revenues.

Gross operating revenues from sales of services to the public in October, 1949, amounted to $14,609,952, compared with $15,535,276 in the same month a year ago. In its report the company attributes this deficit to "the damaging result of the volume-destroying 25 per cent tax on senders of telegrams and the effect of coal and steel strikes upon business generally."

The revenue figures for the 10-month period of 1949, $150,236,646, reflect a decrease of $9,460,001, compared with the same period of 1948. The lower level of general business activity during this year and the luxury tax on telegrams are cited as reasons for this downward trend.

The above figures strikingly indicate a need for remedial measures if the telegraph industry is to survive as a business enterprise.

—D. T. B.

Notes on Recent Publications

HANDS UNSHACKLED . . . HOLD AMERICA'S DESTINY. The St. Joseph Light & Power Company of St. Joseph, Missouri, has recently published a 16-page brochure which consists in the main of reproductions of company advertisements which were used in its 1949 advertising program. Each reproduction has as its central theme the hands of unseen persons engaging in day to day typically American tasks—a mother handing an infant a toy, a teacher helping a student in a drawing class, a carpenter working with his tools, etc. Each advertisement carries the title caption of the booklet. In an introduction to the booklet, C. A. Semrad, president of the utility, explains the reason for the American way-of-life theme in the advertisements. "Our industry is typical of the leading American industries in our belief that there are no limits to the standards which can be attained by men and women in every field . . . working with 'Hands Unshackled.'" The handsome blue "Liberty Bell" cover and striking quotations from famous Americans combine to make the booklet an interesting presentation.

INDUSTRIAL EXPANSION. A good example of utility research in action is seen in a recently published study made by the Territorial Information Department of four midwest utilities—Commonwealth Edison Company, Public Service Company of Northern Illinois, Western United Gas & Electric Company, and Illinois Northern Utilities Company. In this study the Territorial Department, which is a clearing house for facts about the industrial, agricultural, and residential advantages of Chicago and northern Illinois, points out that Chicago ranked first in the industrial areas with 228 new plant facilities valued at $112,697,000. The Houston area, with 90 plants costing $118,527,000, ranked first in value of new plant expenditures. The report goes on to outline the results of the study in other parts of the country and through the use of tables shows a breakdown of the various types of industries covered in the survey. 17 pages. Territorial Information Department, Room 728, Marquette building, 140 South Dearborn street, Chicago 3, Ill.

A GLOSSARY OF IMPORTANT POWER AND RATE TERMS, ABBREVIATIONS, AND UNITS OF MEASUREMENT as used by the member agencies of the Federal Inter-Agency River Basin Committee, *viz.*, Department of Agriculture; Department of Commerce; Department of Interior; Corps of Engineers, Department of the Army; and the Federal Power Commission, is now available.

The glossary subcommittee of the River Basin group consists of: E. Robert De Luccia, chairman, Federal Power Commission; C. H. Giroux, Corps of Engineers, Department of the Army; H. W. Kelley, Department of Agriculture; A. W. Schmidt, Department of Interior; H. E. Way, Department of Commerce. They have just completed their work in bringing up to date this compendium, and inasmuch as this is the first time since 1936 that the glossary has been revised, it should prove interesting and helpful to utilities dealing with these Federal agencies. The publication is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 15 cents.

The March of Events

In General

Transit Major Utility Headache

PUBLIC transit lines have become the major utility headache of larger cities, Jerome M. Joffee, special utilities and legislative counsel for the Kansas City counselor's office, told delegates to the National Institute of Municipal Law Officers meeting in Kansas City last month.

"There is not a handful of transit lines in the country that are making money," Joffee said. "And there are darker days ahead for the lines."

In his rôle as adviser to some 180 city attorneys from other municipalities of the United States and Canada who were attending the 3-day conference, Joffee gave this warning: "If your local transit company attempts to sell or give its system to the city, remember that old maxim: 'Beware of Greeks bearing gifts.'

"Do almost anything to avoid having the system unloaded upon your administration. There is no profit in the operation of a transit line and it appears likely there never will be. You not only would acquire an unprofitable venture but would be subjected to constant pressure from the union for wage increases."

The prevalence of motorcars has reduced transit lines to operating at a loss at least twenty-one hours each day, Joffee said.

Interior Seeks Rehearing

THE Secretary of the Interior has filed an application for rehearing on the Federal Power Commission's order of November 10th which authorized issuance of a 50-year license to Pacific Gas and Electric Company for a hydroelectric development in the Kings river basin of California, and a preliminary permit to Fresno Irrigation District for investigation of the proposed development of a power plant at the Pine Flat dam on the North Fork of the Kings river.

The application for rehearing alleges that the FPC erred in 53 particulars in its orders in the proceedings, which included authorization of the issuance of an amendment of PG&E's license for its existing Balch plant on the North Fork of the Kings river.

The Reclamation Bureau has opposed PG&E and Fresno District applications on grounds that the bureau plans its own development of the Central valley of California, including the Kings river projects.

Rural Co-ops Find It Harder

RURAL coöperatives distributing power of the Tennessee Valley Authority are finding it rougher going than their municipal associates, but most of them are "paying their way," according to an extensive study of TVA power distributors recently published by the University of Tennessee Division of Extension.

Compiled by the U-T Bureau of Business Research, the 115-page book is called the first attempt to examine financial and operating characteristics of 139 of the 143 TVA distributors.

Municipal systems outnumber the coöperatives about two to one, according to the study, and generally "have achieved greater financial success."

In certain typical cases, it was pointed out, municipals have a revenue-produc-

ing capacity—per dollar invested—that is roughly twice that of the coöperatives. Even among all distributors, the four largest cities (Chattanooga, Knoxville, Memphis, and Nashville) account for one-third to one-half of total revenues, customers, and value of electric plant.

Reports on Transport Regulation

THE government, through agencies that do not consult each other, is spending close to $1 billion a year to promote competing transport systems, Secretary of Commerce Sawyer asserted recently. In some cases, he said in a report requested by President Truman, Federal subsidies to one travel medium, the air lines, for instance, are helping to force another medium, the railroads, in this case, into the red.

He said the agencies that regulate common carriers—the Interstate Commerce Commission for trucks and trains, the Civil Aeronautics Board for air lines, and the Maritime Commission for ships—often work at cross purposes. The result, he observed, is that shipments and travelers do not always get the best possible service at the lowest possible cost. Either the taxpayers or the consumers foot the extra bill.

Sawyer proposed that the business of promotion, a term which he said covers not only subsidies but such things as road, airport, and waterways buildings, should be put under a single agency, which would look at the whole problem.

Eventually, he said, it probably will be necessary also to coördinate the work of regulation—the job of rate fixing, licensing, and fixing of routes.

President Truman, with government reorganization and economy in mind, had asked Sawyer to review the "issues involved" in all the government's transportation policies. Sawyer made a number of recommendations.

District of Columbia

Gas Rate Rise Stands

THE District of Columbia Public Utilities Commission last month denied a request from the Federation of Citizens Association that it throw out the recently granted gas rate increases.

In a brief order, the commission stated its decision of last November granting the Washington Gas Light Company an average 6.14 per cent boost in rates had been reached "after careful consideration of the evidence," and that it believed its conclusions were "proper."

The federation had asserted the commission made six errors in reaching its decision, including giving the new rates a retroactive effect. It also charged that the new rates discriminate against certain classes of consumers and will permit the company to earn an excessive rate of return.

Won't Get December Rebates

CUSTOMERS of Potomac Electric Power Company will not receive a discount on their December bills. This was assured recently by a commission order amending the plan adopted in February, 1948, to stabilize electric rates.

The original plan provided that the company was entitled to a 5½ per cent return on its capital investment. Profits in excess of this amount were to be divided, the company to keep half and the other half to be divided between customer rebates and a stabilization fund.

When the company earned less than 5½ per cent it could dip into the stabilization fund to make up the difference. Rate adjustments would be considered only when this fund became very large or small.

The recent order amended the plan to specify no customer rebate will be made when the stabilization fund is less than 3 per cent of total annual operating revenues. This figure is computed at the end of September and equated to an annual basis. Because the fund is now well below 3 per cent of estimated 1949 revenues, the commission ordered all excess

profits, except the company's 50 per cent, placed in the fund.

Commission Approves Radios

WASHINGTON, D. C., commuters will continue to have radio music and commercials on Capital Transit streetcars and busses, the public utilities commission ruled recently.

The commission, dismissing the investigation called for by the clamor of dissenters, not only approved continuance of the FM radio reception now aboard 212 vehicles, but stated it "is not an obstacle to the safety of operation . . . is not inconsistent with public convenience, comfort, and safety."

Basis of the commission's ruling was lack of "substantial evidence" against use of the radio-equipped vehicles.

Announcement by one of the principal interveners of intent to appeal was noted.

Steps by Capital Transit to obtain an increase in fare, reduce service, or both, in the wake of a recent award by an arbitration board of a 10-cent-an-hour increase in wages and other benefits to the company's 4,300 union employees were expected.

Idaho

Rules in Favor of Utility

RETIRED Federal Judge Charles Cavanah last month ruled in favor of the Idaho Power Company in refusing to dismiss and set aside his ruling in a suit brought by the United States government.

Judge Cavanah previously had dismissed an injunction sought by the government against the power company on the grounds it was trespassing on the public domain in construction of a transmission line from American Falls and Boise, Idaho, by way of the Bliss dam.

The government brought an action to have this ruling set aside and dismissed on the grounds the question had become moot. Two days after Judge Cavanah's decision, the Federal Power Commission issued a license to Idaho Power to cross the Federal lands.

"The rule as to dismissal of an action on the ground that the cause becomes moot, applies to the appellate court on appeal, not to the trial court," the judge ruled.

Illinois

To Get More Natural Gas

PEOPLES GAS LIGHT & COKE COMPANY has made arrangements to increase Chicago's natural gas supply 60 per cent by late 1951 through construction of a 30-inch pipeline from the Texas Gulf coast, James F. Oates, Jr., chairman, announced recently.

A Peoples' subsidiary, Texas Illinois Natural Gas Pipeline Company, last month filed with the Federal Power Commission an application to build a 1,400-mile pipeline from the Gulf to a terminal in Joliet. The pipeline will have 300,000,000 cubic feet daily capacity, which can be increased to at least 500,000,000 by 1955 or 1956.

Kentucky

Tram Merger Approved

MERGER of the Louisville Railway Company and the Capital Transit Company of Frankfort was approved last month by the state public service commission.

The Frankfort company, which oper-

ates five busses in the capital, is largely owned by the Louisville Company which operates 464 busses in Louisville.

Stockholders of both firms already had approved the merger, which is primarily aimed at revamping the financial structure of the Louisville Company to eliminate a $5,000,000 capital deficit from its books. Under the plan, a new company —the Louisville Transit Company— would be formed. New stock would be issued and exchanged for the common and preferred stock of the merging firms.

Attorneys representing a group of preferred stockholders announced the Franklin Circuit Court at Frankfort would be asked to set aside the commission's action.

Louisiana

Property Sale Authorized

THE Louisiana Power & Light Company last month took possession of all electric properties in the state of Louisiana belonging to Community Public Service Company of Fort Worth, Texas, W. O. Turner of Algiers, president of Louisiana Power, said recently.

Turner said sale of the properties for $475,000, subject to minor adjustments, was approved by the Federal Power Commission. He said a 25 per cent reduction in rates is now in effect in Ringgold, Arcadia, and in the parishes of Bienville, Claiborne, Lincoln, and Red River where the newly purchased facilities are located.

The reduction was brought about when Louisiana Power put its standard electric rate schedule into effect.

The original cost of the properties, less depreciation, was placed at $250,745.61.

Montana

New Plant Planned

CONSTRUCTION of a 66,000-kilowatt steam-electric generating station will be started at Billings next spring to provide an added source of power for the rapidly growing Midland Empire area, F. W. Bird, president and general manager of the Montana Power Company, announced last month. The plant is expected to be in operation by August, 1951.

The plant, which will add materially to the over-all power supply facilities of the state, will be constructed as one phase of the Montana Power Company's planned program of expansion designed to augment present power supplies and meet the increased demands of the future.

"The Montana Power Company, now and in the past, has had ample electric power for all needs of the state's industrial, commercial, and residential users, and the Billings steam plant will strengthen our supply for the future and will assure a continuation of the service we have been able to offer in the past," Mr. Bird said. "It is particularly appropriate that the steam plant should be built in Billings, which is the center of a rapidly growing industry and marketing region where the population has increased sharply in the last several years."

New Jersey

Higher Fare Upheld

THE state board of public utility commissioners recently decided that the charge by zones on Public Service Coördinated Transport busses and trolley cars is just and reasonable. In effect, the commission said that it was unlikely, now or in the future, for the company to realize as high a return as it

did during the twelve months ended June 30th last because revenues were decreasing, investment cost was increasing, and the cost of operation, due to proposed wage demands, would increase.

The contract of the bus drivers expired on October 31st and a demand for an increase over their present wage of $1.45 an hour was pending before an arbitration group.

The decision indirectly affected most of the independent bus men in New Jersey who were interveners in the proceedings on the side of Public Service. They were authorized to raise their fares temporarily from 5 to 7 cents a year ago last July, when the Public Service increase went into effect.

Utility Files Application

NEW JERSEY BELL TELEPHONE COMPANY has filed with the state commission an application for approval of the issuance of $65,000,000 in new securities, under which it is proposed to issue and sell 500,000 shares of its capital stock, par value $100, and debenture bonds in the aggregate amount of $15,000,000, at public or private sale.

The state commission on September 8th denied the company's application to issue $40,000,000 par value capital stock, suggesting in its decision that the company issue bonds for the needed capital. The company appealed this decision of the commission to the state courts.

New York

Dewey Sees Peril in "Authority"

GOVERNOR DEWEY warned last month against the establishment of an authority to operate the Long Island Railroad, now in the process of reorganization in the Federal court. Although the governor, in an address at the thirty-seventh annual dinner of the Queens Chamber of Commerce in New York city, offered no definite proposal for the railroad to straighten out its financial difficulties, he pointed out that the railroad would become tax exempt if operated by an authority, which would mean that the individual home owner and small businessman would be called upon for increased taxes.

Mr. Dewey said the railroad now was assessed $5,500,000 in taxes annually. With an authority, he pointed out that there would be an additional burden if the railroad continued to operate at a deficit.

"Don't let the railroad get into the hands of the politicians like your subways," Mr. Dewey said. "Our experience in Socialism on city subways and busses is not any better than the British experiment."

Texas

Telephone Rate Boost Approved

THE Houston city council at a special meeting last month approved an application by Southwestern Bell Telephone Company for increased rates, which are expected to boost revenues of the company by approximately $3,995,000 a year, effective immediately.

The increase covers every type of telephone service. Business phone rates were increased from $8.50 to $12 a month; business extensions from $1.25 to $1.50; 1-party residential from $3.50 to $4.75; 2-party from $2.75 to $4; and 4-party residential from $2.40 to $3.25. Residential extensions were raised from 75 cents to $1 a month.

The council said its approval of the increase was based on a 6 per cent "fair return" on the phone company's investment in Houston.

Progress of Regulation

Local End Use of Gas Transported Interstate by Others Constitutes Interstate Commerce

THE Federal Power Commission ruled that upon completion of proposed construction and operation of natural gas pipe-line facilities in the New York city area the Consolidated Edison Company of New York, Brooklyn Union Gas Company, and Kings County Lighting Company would be engaged in interstate commerce within the purview of the Natural Gas Act. These New York companies were parties to an agreement under which each agreed to transport natural gas belonging to the others for an annual charge. This charge was to be computed on the basis of the cost of rendering service, including a return on investment in facilities used.

Pursuant to that agreement the companies proposed to construct transmission pipe-line facilities necessary to effectuate the delivery of natural gas to their respective plants in their franchise areas. Each would own, operate, and maintain the facilities it constructed. These facilities, when completed and placed in operation, would form an integrated pipe-line system.

The agreement was made to obviate the construction of duplicate facilities and an attendant multiple transversing of franchise areas. These companies would accept delivery of out-of-state natural gas at the east bank of the Hudson river in New York city. The gas flow from that delivery point would be continuous and uninterrupted, without additional compression, through the proposed pipelines of the New York companies to their various local gas distribution systems.

The commission held that the proposed transportation of gas, originating in Texas and Louisiana, through the authorized transmission pipeline of a natural gas company and the integrated pipe-line system of the New York companies, to the points of delivery into their local distribution systems, presented a complete and integrated operation having all the essential elements of interstate commerce. It believed the plain facts brought each of the local companies within the definition of a "natural gas company" as set forth in § 2(6) of the Natural Gas Act.

The New York companies contended, however, that they were not, and would not become natural gas companies subject to the jurisdiction of the Federal Power Commission, upon completion and operation of the proposed pipe-line facilities. They urged that the proposed facilities fell within the exemption of § 1(b) of the act, as local distribution facilities, since the facilities were essential to their local gas distribution business. They also claimed that such transportation as took place was merely incident to use at the end. The commission rejected this contention.

The commission pointed out that it had emphasized in an earlier opinion that such a test apparently would require that facilities be classified according to the principal ultimate purpose they served, and that such a construction of § 1(b) would exempt virtually all facilities used

in the natural gas industry. It said that for the principal ultimate purpose, the "end use" of nearly all facilities is either to bring gas to centers of local distribution or thereafter to distribute gas locally.

Classification depends upon the function for which a facility is used. The commission still adheres to that view.

Even if it were assumed that jurisdiction could attach only to the transportation of natural gas in interstate commerce as a business, as the New York companies argued, it would not be logical to assume that the transportation of natural gas in the approximate maximum daily amount of 194,500 MCF by the New York companies through their integrated transmission pipe-line system with average annual earnings in excess of $450,000 did not constitute being engaged in transportation as a business.

The commission found that the introduction of natural gas in the metropolitan area of New York city was warranted and that the plan presented no unusual or unwarranted financing problem or cost that would be detrimental to the public interest. Therefore, it approved construction of the proposed facilities. It found that construction would result in savings which would redound to the public interest. *Re Consolidated Edison Co. of New York, Inc. et al (Docket Nos. G-1167, G-1171, G-1190, Opinion No. 181).*

Retroactive Rate Orders Invalid

THE supreme court of Georgia held that a trial court properly prohibited the enforcement of a commission order requiring a gas company to make retroactive adjustments and refunds to customers. A rate order, like an act of the legislature, operates in the future and cannot apply retroactively. Therefore, an order which, in effect, reduced gas rates was invalid in so far as it required the company to refund payments under a rate schedule which, when the charges were made, was approved by the commission.

In 1947 the commission approved two separate rate schedules. One provided for uninterruptible gas service and the other for interruptible service. The former schedule prescribed a higher rate than the latter. Subsequently, the commission found the uninterruptible service cr .omers had not received any better service than interruptible customers. It ordered the company to apply retroactively its interruptible rate schedule to all customers and to make refunds to those who had been billed on the uninterruptible basis.

The court found nothing in the powers given to the commission which would authorize it to grant reparations or compensatory damages by reason of the collection of unreasonable rates. Here the company was not charged with collecting an unreasonable rate. The customers to whom the company was ordered to make adjustments had paid the rates fixed by the commission.

Even if a commission, after fixing a rate, subsequently determined that it was unreasonably high, it had no authority, in revising the rate, to require refunds. The commission had no more authority to require refunds in this case than it would have to determine that a rate previously fixed had been unreasonably low and to require customers to pay the difference between the amount actually paid and the amount which they should have paid.

The commission argued that the suit against it was a suit against the state and could not be brought without state consent. The court, rejecting this contention, considered the nature of the action and the relief asked, rather than the character of the agency sued. The mere fact that the commission was a constitutional body did not make this an action against the state. If the gas company was successful in this action, the only parties adversely affected would be the customers to whom the order directed the refunds to be made. If the action failed,

the only party affected would be the company, which would have to pay the refund.

The state was not a party to the action. No judgment was asked which would take any state property, fasten a lien on it, or interfere with the disposition of state funds. Neither would it compel the state to perform any contract to pay any debt or direct the exercise of any discretion committed through its officers.

A contention that the company had an adequate remedy at law in that it could have applied for review of the order, or could have set up the invalidity of the order as a defense in any enforcement action, was also rejected. No specific statute in Georgia provides the method by which commission orders can be reviewed. The court held that where no remedy is provided by statute, injunction is the proper remedy.

Even if the commission were correct in its contention that its order could be reviewed by writ of certiorari, such remedy would not be available to the gas company in this action because it claimed that the order was void. The court stated that it has repeatedly held that the writ of certiorari will not lie when the attack on the order in question is on the ground that it is void. *Public Service Commission et al. v. Atlanta Gas Light Co. 55 SE2d 618.*

Rates Must Recognize Service Costs

THE Wisconsin commission denied a telephone utility's application for authority to put a new rate schedule into effect where proposed rates would be discriminatory in that differentials in cost and value of service were not recognized in the plan.

When existing rates were found to be unreasonable because of inadequacy, the commission authorized a schedule which would allow the company a 6 per cent return on the rate base, which it considered reasonable and lawful. *Re Service Teleph. Co. (2-U-3049).*

Rate Change Does Not Impair Contract of Bus Token Holders

AN interesting question as to the obligation of a transit company to accept bus tokens purchased prior to approval of a rate increase was presented to the city court of Rochester, New York, when a passenger sued for damages upon being denied carriage.

Prior to approval of the rate increase six "old" tokens were sold for 50 cents, while the cash fare was 10 cents. The new rates provided for the sale of five tokens for 45 cents with the cash fare remaining unchanged. When the commission approved the rate increase, the company announced that it would cash in all the "old" tokens or would accept them with one cent as the fare for one passenger under the new rates.

The passenger had purchased the tokens about two weeks before the new rates became effective. She boarded a bus on the effective day of the new rates, deposited an "old" token, refused to deposit an additional penny or a new token and finally was ejected from the bus. No force was used.

Two grounds were relied on by the passenger: first, that her purchase of the token marked "good for one city fare" was a contract which could not be impaired by the commission; second, that no authority existed for the company's demand for the additional penny, making a total charge of 9⅓ cents for the ride.

Judge George D. Ogden, after analyzing the complaint and the circumstances surrounding the incident, dismissed the complaint. He ruled that no violation of the "impairment of contract" clause had taken place when the commission approved the rate increase, since the law conferring rate-making authority on the commission had been in effect when the contract was made. The agreement be-

tween the carrier and the passenger was subject to the inherent right of the commission to change its terms.

On the second point the passenger vigorously contended that the demand for an "old" token worth 8¼ cents, plus one cent, was unjustly discriminatory since other passengers were riding for one new token worth 9 cents.

The court overruled this contention by pointing out that anyone using "old" tokens was using them only for their cash equivalent and after adding a penny to their value was paying a cash fare of 9¼ cents. Consequently, Judge Ogden concluded, no basis existed on which the passenger could claim discrimination when the duly established cash fare, under both the new and the old rates, was 10 cents, or two-thirds of a cent more than was demanded of her. *Jones v. Rochester Transit Corp.*

Segregation at Airport Restaurant Permitted

THE action of a colored person for damages resulting from her being refused service in the dining room and coffee shop at an airport because of her race and color was dismissed for the most part by the United States District Court for the Eastern District of Virginia. The restaurant practiced segregation and offered facilities to colored air travelers in another restaurant.

The court ruled that when the passenger was given a chit entitling her to eat at air-line expense at the airport restaurant she was charged with knowledge that the restaurant practiced segregation, so that no right of recovery arose upon her being refused service.

The court refused to dismiss that phase of her action in which her right of recovery was based on the fact that accommodations available to colored people were not substantially equal to those available for whites. The court indicated that a jury trial would follow on this issue. *Nash v. Air Terminal Services, 85 F Supp 545.*

Conversion from Manufactured to Natural Gas Authorized

A GAS company was authorized by the Missouri commission to convert from manufactured gas to straight natural gas where the demand for service greatly exceeded the demand which the company had been able to supply. In order to meet the increased demand by continuing to serve mixed natural and manufactured gas, the company would be required to install additional manufacturing facilities at a great expense.

The resulting cost of the gas would be greater than the cost if conversion to straight natural gas were permitted. Furthermore, the conversion would result in an increase in the capacity, measured in heat units, of the company's distribution system and a consequent increase in its capacity to serve the public. *Re Laclede Gas Light Co. (Case No. 11618).*

Federal Bureau Opposition to Power Project License Fails

THE Federal Power Commission granted a preliminary permit to the Fresno Irrigation District and a 50-year license to the Pacific Gas and Electric Company for hydroelectric power projects on Kings river, California, despite opposition by the Secretary of the Interior and the Bureau of Reclamation.

The commission denied the Fresno District application for authority to develop the north fork of the river. The preliminary permit was for a power plant downstream at the Pine Flat dam. Fresno District could perfect its plan for

serving some of the essential pumping requirements of its members. The commission found that the irrigation district would not be dependent upon the power company for the financial success of such an undertaking. The district could serve a useful function in adequately utilizing the water-power resources at that dam.

The Federal agencies urged that further development of the water resources on Kings river should be left exclusively to the United States, under the Reclamation Bureau's proposed comprehensive plan for development of the Central Valley basin. This plan included projects on Kings river. A commission examiner had previously recommended that development should be undertaken by the United States and that the commission so report to Congress. This, in effect, would deny the present applications. Last August, President Truman rejected a report on the bureau's development plan with the comment that it did not contain sufficient information with respect to engineering and economic feasibility to justify approval.

The commission stated that it was confronted with the suggestion that it should withhold approval of the pending applications and reserve development of the water resources exclusively for the United States on the possibility that at some time in the future a more economic plan of development might be worked out.

It was not persuaded, however, that the revision of the bureau's plan, approved by the Secretary of the Interior, afforded a proper basis for withholding approval of the applications of the irrigation district or the electric company. Both had submitted proposals for more complete development than that proposed by the bureau.

The commission observed that the bureau's plan was contingent on many uncertain factors, such as adequate steam support and markets. There was no assurance that a sound bureau proposal could be prepared. Under such circumstances, it did not believe it to be in the public interest to allow these water resources to remain idle.

Congress gave the commission broad discretionary powers to delay utilization of water-power resources where delay is found to be in the public interest. But, the commission said, the Federal Power Act does not contemplate delay beyond the time when it is economically feasible to provide for construction with the safeguards of licensing conditions. In addition to the desirability of using water power whenever such use is more economical than the use of nonreplaceable fuels, the commission must consider the effect of continued uncertainty upon the general public in the area affected.

In determining the size of the power installation that can be economically made at any particular water-power site, consideration must be given to the characteristics of the water flow available and of the power load which can be served. The commission found that the generating capacity proposed by the electric company should be installed to utilize the waters to their utmost economic value for power purposes.

The company proposed to construct the facilities immediately. It was pointed out that the power company operates a large public utility system which needs additional generating capacity if the public is to continue to be served adequately. The proposed facilities would fit into the company's existing facilities in a desirable manner, and the output could be economically utilized in the company's power market. The company also showed its financial ability to commence work on the facilities immediately and to complete them. *Re Fresno Irrig. Dist. et al. (Project Nos. 1925, 175, 1988, Opinion No. 183).*

Estimated Weight Use by Motor Carriers Ended

THE California commission, after examining the practice of intrastate motor carriers of using "prescribed," "estimated," or "agreed" weights for

shipments, ordered that the carriers commence basing their charges on actual load weights.

The commission ruled that the carriers had the responsibility of determining as accurately as feasible the actual weight. This would tend to eliminate or minimize discrimination between shippers. *Re Rates, Rules, Regulations, Charges, Allowances, and Practices of Common Carriers (Case No. 4808, Decision No. 43301).*

Other Important Rulings

THE Maryland commission, which had authorized temporary rate increases for gas, electric, and steam-heating services, ordered that the temporary rates be made permanent upon finding that those rates produced and would produce a return of between 5½ and 6 per cent. *Re Consolidated Gas E. L. & Power Co. (Case No. 4979, Order No. 46585).*

The Pennsylvania commission held that a nonprofit community club which is not a consumer of a water company and which has no contractual relationship with it is not a party having an interest entitling it to complain against water service. *Lower Paxton Township Supervisors et al. v. Harrisburg Suburban Water Co. (Complaint Docket No. 14788).*

The appellate division of the superior court of New Jersey affirmed an order of the board of public utility commissioners holding that a railroad's responsibility to maintain and repair a bridge does not extend to the approaches to the span but is limited to that portion of the bridge within its right of way. *Bergen County v. Board of Public Utility Commissioners, 68 A2d 645.*

Titles and Index

Preprints in This Issue of Cases to Appear in
PUBLIC UTILITIES REPORTS

TITLES

Commonwealth & Southern Corp., Re	(USDistCt)	27
Connecticut Power Co., Re	(Conn)	1
Jersey Central Power & Light Co., Re	(NJ)	20
Kentucky Utilities Co., Re	(FPC)	31
St. Louis County Water Co., Re	(Mo)	11
Shell Lake, Re	(Wis)	29
Soledad Warehouse Co., Re	(Cal)	24

INDEX

Appeal and review—Commission findings upon holding company liquidation, 27.
Corporations—holding company dissolution, 27; voting rights, 24.
Discrimination—effect of municipal occupational taxes on rates in different localities, 11.
Expenses—municipal occupational taxes, 11.
Intercorporate relations — holding company simplification, 27.
Interstate commerce—state control of security issues as affecting Federal jurisdiction, 31.
Municipal plant—construction of water tank, 29.
Rates—burden of proof, 20; effect of competing fuels, 1; gas rates, 1, 20; municipal license taxes as factor, 11; value of service as factor, 1.
Return—gas and electric company, 1.
Revenues—gas utility, 20.

Public Utilities Reports (New Series) are published in five bound volumes annually, with an Annual Digest. These Reports contain the cases preprinted in the issues of PUBLIC UTILITIES FORTNIGHTLY, as well as additional cases and digests of cases. The volumes are $7.50 each; the Annual Digest $6.00. *Public Utilities Reports* also will subsequently contain in full or abstract form cases referred to in the foregoing pages of "Progress of Regulation."

PUBLIC UTILITIES REPORTS

CONNECTICUT PUBLIC UTILITIES COMMISSION

Re Connecticut Power Company

Docket No. 8259
October 28, 1949

APPLICATION *by a gas and electric company for authority to increase gas rates; denied.*

Rates, § 381 — Gas — Competing fuels.

1. The Commission will not authorize a gas rate increase where this will result in drying up the demand for gas service by forcing customers to convert to electricity or other competitive fuels, p. 10.

Return, § 71 — Gas and electric company — Maintenance of corporate credit.

2. A gas and electric company should not be authorized to charge increased gas rates exceeding the value of service where under existing rates it will earn a return upon its net investment in its combined gas and electric utility plant adequate to maintain corporate credit, p. 11.

Rates, § 172 — Reasonableness — Value of service.

3. Public utility rates should not exceed the value of the service to the consumer, p. 11.

By the COMMISSION:

Summary of Finding and Order

The Commission considers and denies the application of The Connecticut Power Company to increase its gas rates in its three gas divisions, New London, Stamford, and Torrington, to yield $178,000 annually in additional revenues, an average increase of 9 per cent in revenues. The Commission had previously authorized an adjustment of the company's gas rates in amount of $185,000 annually, effective January 15, 1949, the principal reason being a substantial increase in wages for the company in 1948. In denying the present application of the company, the Commission considers the applica-

tion from the aspect claimed by the company of maintaining earnings, as a combined gas and electric utility, sufficient to maintain its corporate credit. The Commission finds that the net earnings of the company as a whole for the year 1949 will be sufficient to maintain its corporate credit without increasing further its level of gas rates.

The Commission considers the proposed gas rates as related to the cost of producing gas in the several divisions and the relative efficiency of the company's gas manufacturing plants in those divisions. The Commission observes that, from present indications, natural gas will be available by 1951 in the Stamford Division. The Commission finds that the proposed gas rates will be more expensive to many customers than would be the case if electricity were used instead of gas, and that many customers will be gradually forced to convert from gas to electricity or to other competitive fuels if the gas rates are increased further. The Commission finds that until natural gas is available for distribution within this state, the solution lies in continuing unchanged the present level of gas rates in the three divisions. In the interim, the maintenance of the present level of gas rates will aid in retaining present business and should aid in attracting new business, to the end that the cost of gas in the holder will not increase further.

The Commission concludes, under these economic circumstances and in view of the company's expected experience in 1949 of a sufficient return upon its net investment in its combined gas and electric property adequate to maintain its corporate credit, that the petition for rate relief should be and it is denied.

The Application, Hearing, and Appearances

The Connecticut Power Company filed with the Commission on May 13, 1949, revised gas rate schedules to supersede all of the company's gas rate schedules on file with the Commission and to became effective July 1, 1949. These revised schedules are applicable to the company's residential, commercial, and industrial customers in the divisions in which it supplies gas, namely, its New London, Stamford, and Torrington divisions. These schedules were designed to increase the company's revenues from its gas department $178,000 annually, a 9 per cent increase in its revenues from sales of gas. Further details respecting these revised rate schedules are set forth in following pages.

Upon the filing of these revised rate schedules the Commission issued an order suspending the proposed rates until further order of the Commission. The Commission also ordered that an investigation be made of the reasonableness of the proposed new rates and, for such purpose, assigned a hearing to be held at the Commission's office, room 585, State Office building, Hartford, on Tuesday, July 12, 1949, beginning at 10:30 o'clock in the forenoon (daylight saving time). Notice of the time and place of the hearing was given to The Connecticut Power Company, to the municipalities affected by the revised rates and to other interested parties, as fully appears from Commission's order of notice and return of its secretary thereon, on file. Public notice was also given by advertisement in the New London Day,

Darien Review, Stamford Advocate, Torrington Register, and Norwalk Hour. At said time and place The Connecticut Power Company appeared by officers and counsel. The city of New London appeared by its city manager and a member of its common council in objection to the increases in rates applicable to New London. The hearing was continued on July 13, 1949, and then adjourned until August 24, 1949, at 10:30 A. M. to be held at the Commission's office in Hartford and was concluded on that date, due notice of the adjourned hearing being given to the interested parties by the secretary of the Commission and public notice again advertised in the newspapers set forth above. At the adjourned hearing on August 24, 1949, The Connecticut Power Company and the city of New London again appeared. At this adjourned hearing, in addition to the appearance of the company and the city of New London, a number of organizations, mercantile, political, and labor, as well as a number of gas customers of the company, principally in the Stamford area, appeared and expressed their objections to the proposed increase in gas rates. Letters from individuals and business firms in the New London, Stamford, and Torrington divisions of the company in objection to the petition were filed at or prior to the several hearings. Prior to the adjourned hearing on August 24, 1949, a letter protesting the increase in rates was filed by the retail merchants of Stamford, Inc. A large number of telegrams from Stamford merchants were received by the Commission on August 23, 1949, objecting to the granting of the petition. Telegrams were also filed by the mayor of Stamford, the city manager of New London, and the Eastern Connecticut Restaurant Association of New London at or prior to the adjourned hearing, all of these communications objecting to the increase in gas rates. A petition, signed by 3,490 housewives in Stamford, in objection to the petition, was filed at the adjourned hearing on August 24, 1949, and a petition, signed by approximately 1,000 residents of Stamford, members of the International Association of Machinists, District Lodge #127, also protesting the proposed rate increase, was filed by that association with the Commission subsequent to the hearings.

The Connecticut Power Company operates in seven divisions, known as the Farmington, Housatonic, Manchester, Middletown, New London, Stamford, and Torrington divisions. In the New London, Stamford, and Torrington divisions the company distributes both gas and electricity. It distributes electricity only in the Farmington, Housatonic, Manchester, and Middletown divisions.

Gas Rates Proposed by the Company in Its Application

The proposed increases in gas rates, as allocated between the several classes of customers, together with the per cent increase, are shown in Table I below:

TABLE I

Class of Service	Estimated Annual Increase in Revenues 1949 Basis	Per Cent Increase
Residential	$123,000	8.3
Commercial	39,100	11.1
Industrial	13,900	10.9
Other	1,600	12.3
Total	$177,600	Av.— 9.0

The gas customers of the company in its Stamford, New London, and Torrington divisions, separated as between residential customers and all other customers, are shown in the following table:

TABLE II

	Residential Gas Customers	All Other Gas Customers	Total
Stamford	14,855	1,044	15,899
New London	7,798	852	8,650
Torrington	5,830	322	6,152
Total	28,483	2,218	30,701

Prior Rate Relief

Effective January 15, 1949, the Commission authorized an increase in operating revenues for The Connecticut Power Company of $536,000 per annum, based upon estimated sales of gas and electricity for the year 1949 (Commission Docket No. 8151 dated December 30, 1948). This total increase, substantially less than the $708,000 requested by the company, was apportioned $185,000 to the gas department and $351,000 to the electric department. The increase in revenue in the electric department was authorized by the extension of the company's fuel adjustment clause to all of its commercial and industrial customers and to municipal street lighting; also, by extending the company's fuel adjustment clause to all its residential and municipal customers.

In the gas department a change in rates was authorized, namely, the monthly minimum charge was raised 50 cents in each of the gas divisions.

The Commission found in its Docket No. 8151 that the company had operated its gas departments in its Torrington and New London divisions at a deficit in the year 1948 and had operated its gas department in its Stamford Division at a small profit in that year. The principal reason for the increase in revenues authorized by the Commission in its Docket No. 8151 was an increase in wages of about $300,000 on a 12-month basis which the company had sustained in July, 1948, retroactive to April, 1948, and which was allocated $225,000 to the electric department and $75,000 to the gas department.

The Company's Estimated Gas Earnings in 1949 and Reasons for Rate Relief

At the hearing upon the present petition the company stated as the reason for the proposed increases in rates the necessity of bringing up its net earnings in its gas department from almost a deficit in 1949, as estimated at the hearing, to a small profit. Effective May 1, 1949, the company had sustained a further increase in wages of $100,000 on an annual basis allocated approximately $75,000 to the electric department and $25,000 to the gas department. The purpose of this requested rate relief, the company stated, was to enable it, as a combined gas and electric utility, to earn sufficient revenues upon which to finance new capital requirements that are needed, largely in its electric department, in keeping abreast of a continuing demand for service from its customers. It claimed for the purpose of raising this capital that its present dividend

rate of 9 per cent on its common capital stock should be retained. The company estimated that the proposed rates for the gas department, in combination with its expected earnings for 1949 in the electric department, would afford a return or profit of 6.3 per cent to the company on the net cost of its combined electric and gas plant, including an allowance for working capital, materials and supplies, in all $35,099,000, with the proposed gas rates and present level of wages in force for twelve months.

Shortly before the Commission authorized the change in rates on December 30, 1948, in its Docket No. 8151, it approved the issue by The Connecticut Power Company of $6,000,000 of its first and general mortgage bonds (Commission Docket No. 8156, dated November 12, 1948) for the purpose of defraying capital additions in both the electric and gas departments of the company, but principally in the electric department. This increase in bonded debt raised the proportion of long-term debt to total capitalization in the company's capital structure from 36 per cent before the bond issue to 46 per cent after the bond issue.

For the year ended December 31, 1948, the gas department operated at a loss of $141,451, which represented a period prior to the rate relief in the amount of $185,000 authorized in Docket No. 8151. At the hearing estimates of revenues and expenses for 1949 in the gas and electric departments were presented, these estimates being based upon the actual revenues and expenses for the first four months with the last eight months estimated. Subsequent to the hearing the company filed with the Commission in accordance with its direction at the hearing, revised estimates for 1949 for both departments and the company as a whole, these revised estimates reflecting the company's actual experience for the first six months of the year, the remainder for the year being estimated. This revised estimate shows improvements in net earnings in the gas department and an increase in the utility operating income for the company as a whole compared with the original estimate submitted at the hearing.

The Commission now considers these revised estimates and the question of whether rate relief is required for the company as a whole to maintain its corporate credit in financing new capital requirements to provide adequate service to the public, largely in its electric department.

These revised estimates show for the first six months of 1949 that the company earned a profit before Federal income taxes of $24,868 in its gas department, largely as a result of the increase in gas rates authorized in Commission Docket No. 8151. For the remaining six months of 1949, the estimate indicates a loss in operations of $16,050 in the gas department, principally due to a drop in estimated sales of gas in the second half of 1949. On a twelve months' basis for 1949, the indicated earnings in the gas department before Federal income taxes are $8,818 and after taxes the utility operating income is $6,046, and for the electric department the utility operating income is estimated at $2,123,913, and for the combined departments is estimated at $2,129,959.

In Table III below we show these revenues, expenses, and utility operat-

ing income for each department separately and for the combined departments for the year 1949 on the basis of the revised estimate:

TABLE III

Estimated Income Statement for Year 1949

	Electric Department	Gas Department	Combined Departments
Revenues			
Sales	$11,583,396	$2,376,510	$13,959,906
Other Revenues	45,733	9,187	54,920
Total Operating Revenues	$11,629,129	$2,385,697	$14,014,826
Expenses			
Production—Operation and Maintenance	$4,009,851	$1,350,188	$5,360,039
Transmission—Operation and Maintenance	205,425	24,484	229,909
Distribution—Operation and Maintenance	977,405	293,107	1,270,512
Customers Accounting and Collecting	357,779	95,440	453,219
Sales Promotion	92,815	41,216	134,031
Administrative and General	960,355	201,784	1,162,139
Wage Increase	36,270	12,090	48,360
Total Operating Expenses	$6,639,900	$2,018,309	$8,658,209
Depreciation	920,280	161,280	1,081,560
Taxes Other than Federal Income	957,770	197,290	1,155,060
Total Expenses	$8,517,950	$2,376,879	$10,894,829
Operating Income before Federal Income Taxes	$3,111,179	$8,818	$3,119,997
Federal Income Tax	987,266	2,772	990,038
Utility Operating Income	$2,123,913	$6,046	$2,129,959

We show now in Table IV below the company's investment in its electric and gas departments separately and as a combined gas and electric company, together with allowances for working capital, materials and supplies as of June 30, 1949, actual, and as of December 31, 1949, as estimated by the company. Inasmuch as a substantial part of the increased utility plant, in the electric department principally, as of December 31, 1949, has yet to be installed, the Commission shows also in this table, as an indicated rate base, an average between the two periods, June 30, 1949, and December 31, 1949.

TABLE IV

Projected Rate Base as of December 31, 1949

	Electric Department	Gas Department	Combined Departments
Utility Plant*	$34,314,375	$8,342,003	$42,656,378
Less Accrued Depreciation	7,574,126	2,778,233	10,352,359
Net Cost of Plant	$26,740,249	$5,563,770	$32,304,019
Add—			
Working Capital and Materials and Supplies	2,230,000	565,000	2,795,000
Net Capital Investment Projected to December 31, 1949	$28,970,249	$6,128,770	$35,099,019

*On the basis of estimated 1949 plant additions and retirements and after deduction of customers' contributions for extensions.

Indicated Rate Base as of June 30, 1949

Utility Plant	$32,935,472	$8,181,083	$41,116,555
Less Accrued Depreciation	7,918,880	2,729,722	10,648,602
Net Cost of Plant	$25,016,592	$5,451,361	$30,467,953
Add—			
Working Capital and Materials and Supplies	2,161,000	570,000	2,731,000
Net Capital Investment	$27,177,592	$6,021,361	$33,198,953

Indicated Rate Base Averaged

Average Rate Base Rounded Out	$28,074,000	$6,075,000	$34,149,000

The utility operating income of the company estimated for the year 1949, under the present rates for the two departments separately and as a combined electric and gas utility, which we have shown in Table III, may be now related in the following Table V to the indicated rate bases of the several periods shown in Table IV together with the indicated rate of return.

TABLE V

Ratio of Utility Operating Income to Net Capital Investment

1949	Electric Department	Gas Department	Combined Departments
Rate Base as of June 30, 1949	$27,177,592	$6,021,361	$33,198,953
Rate Base as of December 31, 1949	28,970,249	6,128,770	35,099,019
Rate Base Averaged	28,074,000	6,075,000	34,149,000
Utility Operating Income	2,123,913	6,046	2,129,959
Ratio of Utility Operating Income to Rate Base as of:—			
1. June 30, 1949	7.81%	.10%	6.42%
2. December 31, 1949	7.33%	.10%	6.07%
3. Averaged	7.57%	.10%	6.24%

As set forth in Table V above, the ratio of the company's utility operating income on a system basis, including both the gas and electric departments, to the average rate base for the year 1949 is estimated to be 6.24 per cent. In the electric department the ratio of the utility operating income to the average rate base of that department for the year 1949 is 7.57 per cent while in the gas department the company will earn but a slight return. Although the indicated return in the gas department is small, it will be observed that the company in the instant proceeding is requesting gas rates that will yield

only a 1.7 per cent return. The indicated system return of 6.24 per cent is substantially the return of 6.3 per cent which the company estimated that the higher gas rates would produce on an annual basis. If the improvement in the utility operating income of each department and for the system as a whole, indicated by a comparison of the first six months' actual experience with the company's original estimate, based upon four months' actual experience, continues throughout the balance of the year 1949, it is obvious that further improvement in the company's utility operating income, as shown in Table V, will be experienced. Accordingly, the Commission called upon the company to submit for its examination a further estimate of its 1949 operating income using as many months of actual experience as possible with the remainder of the year estimated. An examination of this revised estimate, submitted by the company, based upon the first nine months of 1949 actual and three months estimated, reflects that the upward trend indicated in the revised estimate submitted on a six months' actual basis will continue for the remainder of the year. It now appears from that further estimate that unquestionably the company can expect a somewhat greater operating income for the entire year 1949 than the operating income shown in Table V in the amount of $2,129,959 and sufficient to maintain its corporate credit, the purpose of this rate application.

From the evidence summarized above, the Commission finds that the company has failed to demonstrate a need for rate relief and further consideration of the application can be limited to the reasons for the low earnings in the gas department and the injustice to customers in increasing gas rates beyond their present level.

Production Costs of Gas in the Stamford, New London, and Torrington Divisions

Basically the low earnings in the gas department are due to the high cost of producing gas in the three divisions represented by the cost of gas in the holder and we proceed accordingly to consider that subject. There is a wide variation between the cost of producing gas in the three divisions, from a low of 66 cents per thousand cubic feet in the Stamford Division to a high of $1.03 per thousand cubic feet in the Torrington Division, the New London Division being intermediate at 83 cents per thousand cubic feet. The company's gas expert testified that the gas plant in the Stamford Division is the most efficient of the three divisions as measured by the cost of gas in the holder. There are several tests of efficiency but this one appears to be the proper test since it determines the effect upon the customers. The variation between cost of manufacturing gas in the three divisions is due to several reasons, one being the relationship between plant capacity and demand, another is the kind and cost of gas-making fuels used, and a third is the particular process of manufacture.

In the New London Division all gas manufactured is by the water gas process, using a specially prepared coal and a light gas oil as an enricher. In the Torrington Division the process is also water gas but coke is used for generator fuel rather than coal and a light gas oil is also the enricher. In Stamford gas is made by both the

water gas process and the coal gas process, the water gas process being principally used. The company recently installed a propane gas plant in its Stamford Division because of the combined demand for gas in the Stamford Division and from the Greenwich Gas Company which has forced the company to utilize its gas manufacturing facilities to their maximum capacities. The Connecticut Power Company supplies the Greenwich Gas Company with all the gas distributed by that company. While the cost of making water gas in Stamford is materially less than the cost of making coal gas, 56½ cents per thousand cubic feet for water gas and 82 cents per thousand cubic feet for coal gas in 1948, the company cannot shut down the coal gas plant without a substantial investment in another water gas set. At the same time it is not economical to increase substantially the investment in a propane gas plant because the market price of that commodity varies widely dependent upon its supply as a by-product of gasoline. In order to overcome marked fluctuations in the market price of propane, large storage facilities would be necessary. Hence the company limits the use of propane to meeting peak periods of demand.

The Commission observes from net earnings in the gas department of the Stamford Division that generally since 1944 operations have been profitable in that division. On the other hand, the New London Division has consistently operated at a deficit from 1944 through 1949 estimated, and the Torrington Division has generally operated at a small profit throughout the same period. This contrast between the Stamford Division and the other two divisions is due to the wide variation in the cost of producing gas in the several divisions, as previously stated. The New London and the Torrington divisions are efficient as measured by the quantity of fuel required to make gas per thousand cubic feet, but measuring efficiency by the cost of gas in the holder, as related to all production costs, they are inefficient. The demand for gas in the New London Division is not sufficient to utilize the present capacity of the gas-making plant at its most efficient level for production, with the result that the average cost of producing gas per thousand cubic feet is high. In the Torrington Division, there is not sufficient demand for gas to operate the plant on a two-shift basis and there is too much demand for gas to operate on a one-shift basis. With respect to the New London Division in particular, any decrease in the present quantity of gas manufactured would further increase the cost of the gas in the holder, so long as the present price levels of gas-making fuels do not decline substantially, and any decrease in the sale of gas in that division, resulting from increasing the present level of rates, would obviously increase the cost of gas in the holder.

We have, therefore, a situation in the three divisions where the company must either revamp its gas-making plant and, with respect to the Stamford Division, must also enlarge its plant, all at a substantial capital outlay, or endeavor to tide over the situation until natural gas becomes available. Inasmuch as natural gas is now available for local distribution in the New York area, it appears reasonable to expect that by 1951 it will be available

in the Stamford Division and will permit the company to avoid substantial additions to its gas-manufacturing plant in Stamford. At the same time this availability of natural gas would reduce the requirements of the Greenwich Gas Company upon the Stamford Division since natural gas would be available to the Greenwich Gas Company directly.

The Economics of the Situation

[1] We come now to the effect upon the gas customers of the company of imposing higher gas rates upon them under the circumstances to which we have referred in the topic above. A study of the proposed gas rates in the several divisions in relation to the cost of electricity in the same divisions indicates that where the two fuels are competitive, in the field of cooking, for example, the proposed gas rates will be more expensive to the customer than would be the case if electricity were used instead of gas. The Connecticut Power Company is the only company supplying electric service in the areas that it serves with gas. It is obvious that under such circumstances new customers in the commercial and residential classes would be discouraged from using gas and the only deterrent to an existing gas customer from converting to electricity is the cost of the conversion and the cost of obtaining the required appliances. Some point is reached for this type of customer, depending essentially upon the age of his gas appliances, where a further increase in gas rates will force him to make the conversion. To some extent, also, it appears that the proposed gas rates would be close to the cost in the same areas concerned of so-called bottled gas, technically known as liquid petroleum gas, thereby exposing the company to loss of sales to this competitive fuel. This is particularly true in the Torrington Division, especially with respect to industrial customers. There are a few of such customers who use gas in large amounts and the present gas rates hold that business. A further increase in rates may lose that business.

As shown in Table I, the proposed increase for each class of service is high and, as an average, it is 9 per cent for all classes of customers. In endeavoring to increase its earnings in its gas department under the conditions presently obtaining in the cost of manufacturing gas in its several divisions, by increasing its existing gas rates to and beyond the cost of competitive fuels, the company appears to be following a vicious circle, particularly in the Torrington and New London divisions. A decrease in the volume of sales in those divisions, as we have previously pointed out, will only increase further the cost of gas in the holder. We have also called attention to the fact that in the Stamford Division the gas department has generally operated at a profit since 1944. The Commission cannot be a party to drying up the demand for gas service by forcing customers to the use of competitive fuels as the other alternative.

For the present, and until natural gas is available for distribution within this state, the solution appears to lie in continuing unchanged the present level of gas rates. In the interim, the maintenance of the present level of gas rates will aid in retaining present business and should aid in attracting new

business, to the end that the cost of gas in the holder will not increase further.

Conclusion

[2, 3] The discussion above shows that the effect upon customers of the higher level of gas rates proposed would be to defeat its purpose by exceeding the value of the service to consumers (New Haven v. New Haven Water Co. [1934] 118 Conn 389, 402, 5 PUR NS 319, 172 Atl 767). Ordinarily, the upper limit of a rate, that it shall not exceed the value of the service to the consumers, is not important as a legal test because economics set that upper limit and, while basic economic laws work slowly, they work inexorably, despite governmental controls. The facts set forth above regarding the gas department clearly establish that the upper limit is a legal criterion in this case, interrelated, as it is, with the economic principles implicit in the discussion above. Under such circumstances, and in the light of the company's 1949 experience indicating that it will earn a return upon its net investment in its combined gas and electric utility plant adequate to maintain its corporate credit, the Commission finds that the petition for rate relief should be, and it hereby is, denied.

We hereby direct that notice of the foregoing be given by the secretary of this Commission by forwarding true and correct copies of this document to parties in interest, and due return make.

MISSOURI PUBLIC SERVICE COMMISSION

Re St. Louis County Water Company

Case No. 11,481
August 10, 1949; rehearing denied September 9, 1949

APPLICATION *for authority to increase water rates to cover municipal license taxes and franchise payments; new rates prescribed.*

Discrimination, § 32 — Between localities — Water rates — Municipal occupational taxes.

1. It is an unjust discrimination for water consumers of one area to be burdened with any part of the municipal license taxes levied or payments exacted by another area, p. 16.

Rates, § 48 — Commission power — Municipal occupational taxes.

2. The Commission has power to prescribe water rates which will, in effect, make a proper allocation of the operating expenses represented by municipal license taxes and franchise payments; in so doing it does not encroach upon or limit the powers or rights of any municipality to assess or collect taxes, p. 16.

Expenses, § 109 — Municipal occupational taxes — Water company.

3. The absorption, as general operating expenses, of municipal license

taxes and franchise payments, up to 2 per cent of a water company's annual revenues, to municipalities in which it operates under 20-year franchises should not be approved, p. 18.

Rates, § 147 — Cost of service — Municipal license taxes.

4. Water consumers in municipalities levying license taxes or franchise payments should bear the burden of providing that revenue, and consumers living elsewhere than in the taxing municipalities should not be required to pay higher rates so as to provide the money necessary to pay those taxes, p. 18.

APPEARANCES: Emmet T. Carter and Gerald K. Presburg, for St. Louis County Water Company; George L. Stemmler and Forrest G. Ferris, Jr., for the city of St. Louis; Marvin E. Boisseau, for University City, Berkeley, and Beverly Hills; L. A. Robertson, for the city of Richmond Heights; Lester W. Spilker, for village of Bel-Nor; Ronald S. Reed, for city of St. Joseph; Glen Mohler, for city of Clayton; R. E. Duffy, for the Commission.

By the COMMISSION: On October 25, 1948, the St. Louis County Water Company (hereinafter sometimes referred to as applicant or company), filed with the Commission new rate schedules, which, upon becoming effective, would cancel its existing rates.

The purpose of the new rate schedules, as explained in a statement accompanying same, is "to correct rate inequities between customers in the same classifications of service which have arisen because of recent impositions of license taxes by some of the municipalities in St. Louis county."

Should these proposed schedules become effective, the company would then be authorized to collect from the water consumers of such incorporated areas in which it serves but in which it does not have a 20-year franchise, all license taxes imposed upon its operations by such incorporated areas; and in incorporated areas in which it serves but in which it is operating under a 20-year franchise, it would collect from the water users therein all license taxes levied by such incorporated areas in excess of 2 per cent.

Subsequent to the filing of the proposed rate schedules, several petitions, resolutions, and communications were received from various municipal corporations and political subdivisions objecting to the rate schedules becoming effective.

Thereafter, on the 12th day of November, 1948, the Commission suspended said rate schedules and set the matter for hearing. Pursuant to due notice, the matter was heard by the Commission en banc at its hearing room in Jefferson City, Missouri, on January 12, 1949. All parties who requested were allowed to intervene and participate in the hearing. The parties appearing and participating in the hearing and their attorneys are shown above.

Upon completion of the testimony, the Commission granted the applicant 60 days in which to file a brief and allowed 30 days for answers thereto by intervenors and allowed 10 days for a reply to such answers, after which the case was submitted on the record. Briefs were filed on behalf of the applicant and on behalf of the cities of

St. Louis, University City, Richmond Heights, Beverly Hills, and Berkeley. No facts were disputed in the briefs filed in this case.

Findings of Fact

The company's evidence consisted of the testimony of W. V. Weir, its president, and fourteen exhibits. The only intervenors to present any evidence at the hearing were the city of St. Louis, the city of University City, the city of Beverly Hills, the city of Berkeley, and the city of Richmond Heights, which evidence consisted merely of a brief stipulation to the effect that said cities levied license taxes upon the various utilities operating within their corporate limits.

The company is a corporation organized and existing under and by virtue of the laws of the state of Missouri, with its principal office in the city of University City, Missouri. It is authorized to carry on the business of a water company and is now, and has been for a long time past, engaged in doing business as such water company in the county of St. Louis, Missouri. The company distributes water and supplies fire hydrant service to consumers resident in the incorporated and unincorporated areas of St. Louis county with the exception of the cities of Webster Groves and Florissant and Public Water Supply District No. 3, to which the company sells water wholesale, and with the exception of the city of Kirkwood, in which only a portion of the consumers are served, the balance of whom are served by the city from its own supply. The incorporated areas served, exclusive of the above noted exceptions, include four towns, thirty-eight villages, and twenty-four cities, or a total of sixty-six incorporated areas.

Sixteen of the sixty-six incorporated areas which the company serves have levied license taxes upon the applicant, which are payable annually and which range in the amount from a flat payment of $1,300 to a sum equal to 5 per cent of the company's gross receipts in the incorporated areas concerned. The names of the municipalities levying license taxes, the amount of the tax levied and the dates on which such levies began are as follows:

Date	Municipality	Tax Rate
Apr. 23, 1943	City of Maplewood	$1,300 Annually
Nov. 6, 1946	" " Berkeley	2% of Gross Receipts
Aug. 4, 1947	" " Rock Hill	2% of Gross Receipts
Aug. 26, 1947	" " Overland	2% of Gross Receipts
Sept. 8, 1947	" " Oakland	2% of Gross Receipts
Oct. 14, 1947	" " Northwoods	2% of Gross Receipts
Oct. 27, 1947	" " Pine Lawn	2% of Gross Receipts
Nov. 13, 1947	" " Arbor Terrace	2% of Gross Receipts
Dec. 1, 1947	" " Jennings	2% of Gross Receipts
June 21, 1948	" " University City	5% of Gross Receipts
June 1, 1948	" " Beverly Hills	5% of Gross Receipts
June 28, 1948	Village of Bel-Nor	5% of Gross Receipts
Sept. 20, 1948	City of Richmond Heights	5% of Gross Receipts
Nov. 12, 1948	" " Glendale	5% of Gross Receipts
Nov. 15, 1948	" " Ladue	2% of Gross Receipts
Jan. 1, 1949	" " Shrewsbury	2% of Gross Receipts

No license tax is paid for the right to do business in any of the unincorporated territory of St. Louis county.

No license taxes have been levied by any of the four towns, thirty-seven of the thirty-eight villages, and nine of

the twenty-four cities which the company serves. However, the company does presently pay under franchise agreements a 2 per cent gross receipts tax to the cities of Clayton, Brentwood, and Ferguson and the village of Velda Village Hills.

Seven of the first ten revenue-producing areas per customer, as well as seven of the first ten revenue-producing areas per mile of water main, are towns or villages in which no license taxes are levied or franchise payments made.

The twenty incorporated areas which collect license taxes or franchise payments, in these two respects, rank as follows:

	Gross Revenue Per Customer	Gross Revenue Per Mile
City of Ladue	7th	51st
" " University City	10th	12th
" " Richmond Heights	13th	14th
" " Oakland	14th	45th
" " Maplewood	18th	9th
" " Shrewsbury	19th	31st
" " Glendale	21st	48th
" " Pine Lawn	26th	8th
" " Berkeley	29th	57th
" " Northwoods	30th	52nd
" " Overland	33rd	36th
Village of Bel-Nor	34th	40th
City of Rock Hill	36th	43rd
" " Jennings	44th	33rd
" " Arbor Terrace	46th	28th
" " Beverly Hills	53rd	39th
" " Clayton	5th	4th
" " Brentwood	24th	29th
" " Ferguson	32nd	49th
Village of Velda Village Hills	54th	10th

The gross revenue received by the company during the calendar year 1947 from the 24 cities which it serves amounted to $1,008,803. Of this amount, $752,514, or 74.5 per cent, was received from the 15 cities which have exercised their license taxing power and $256,289 or 25.5 per cent was received from the remaining 9 cities which have not levied license taxes. Of the $752,514 received from the 15 cities which levy license taxes, $367,015 or 48.8 per cent was received from cities which levy a tax of 2 per cent on gross receipts, or less, and $385,499 or 51.2 per cent, was received from cities which levy a tax of 5 per cent on gross receipts.

Both the present and the proposed rates are on a system-wide basis. None of the rates in question are applicable only to a given city, town, or village. The basic charges in both the present and the proposed rates, aside from the license tax feature, are identical. The only difference between the present and the proposed rates is that the proposed rates have superimposed upon the basic charges any license taxes imposed by an incorporated area with which the company does not have a 20-year franchise and fire hydrant rental contract, or any license taxes in excess of 2 per cent imposed by any municipality with which the company does have a 20-year franchise and fire hydrant rental contract, whichever the case may be. The net effect of the proposed rates is to leave the basic charges exactly the same as they have

been and to allocate special taxes levied by a municipality to the consumers in such municipality, rather than to all of the consumers of the system.

Contentions of Parties

The company, in its statement filed with its rate schedules, states that the proposed rate schedules are required to correct rate inequities resulting from recent impositions of license taxes by some of the municipalities which it serves; that license taxes which are legally levied by cities which it serves must be paid by applicant, and are properly chargeable to operating expenses; that in fairness to water consumers outside a taxing municipality there should be a direct allocation of such special tax costs to the residents of the municipality which will benefit by such tax revenues. The company further takes the position that it is not improper to pay to a city which gives to it a 20-year franchise a 2 per cent gross receipts tax because all consumers throughout the system receive some benefit by reason of the stability of the utility resulting from its having franchises with the municipalities in which it operates.

On the other hand the protesting cities contend that the real issue being one of local taxes, and not rates, the Commission is without jurisdiction in the premises; that the proposed rates would result in unlawful and unreasonable discrimination because the rates which consumers in the same classification would pay would be solely dependent upon the existence or nonexistence of a 20-year franchise; the applicant's proposal amounts to the the capitalization of a franchise in a manner not authorized by law; and aside from jurisdictional and other questions raised, applicant's 2 per cent tax limitation is arbitrary and unreasonably low.

Conclusions

It is considered desirable at the outset to define the scope of this inquiry. This is not the usual type of rate case in that the question as to whether or not the company is making a fair return has no relevancy in this particular case. Nor is it appropriate in this proceeding to inquire into the reasonableness of the basic rate classifications of the company. If there is likelihood that the company is making more or less than a fair return, or if it should appear that the company's basic rate classifications are improper, then the Commission should, of course, in another proceeding directed at either or both of those matters, make an investigation to ascertain whether or not changes therein should be ordered by this Commission. The only question presented in this case concerns the proper allocation of the moneys paid by the company to the municipal corporations under taxing ordinances or pursuant to franchise provisions; that is, whether these payments should be included in the company's general operating expenses or segregated and allocated to the consumers in the respective municipal corporations to which the moneys are paid.

In short, the sole question presented is whether or not an unjust discrimination exists. If such discrimination does in fact exist, we are of the opinion that it is our duty to eliminate it even though a rate increase to certain consumers would be effected thereby. Of

course, our duty to eliminate any such unjust discrimination is wholly dependent upon our legal authority so to do.

[1, 2] No question has been raised as to the legality of any of the taxing ordinances or franchise agreements herein involved. Therefore, it must be presumed that all exactions thereunder are legitimate operating expenses of the company. All operating expenses (whether for the payment of license taxes, general taxes, labor, maintenance, or whatnot) are, and must be, paid by applicant out of revenues it receives from its customers in payment of their water bills. It has no other source of income.

So here we have a utility serving sixty-six municipalities and several densely populated unincorporated areas. Under its method of operation, none of its rate schedules is applicable to a single area, and all of its operating expenses are paid from moneys which the company receives from its patrons throughout its whole system. Some of the areas served, for reasons of their own, levy license taxes on the company's business therein conducted. Others exact annual franchise payments for the operating privilege. Others, either from their own choosing or because of the absence of statutory authority, do not levy such taxes. Every area, whether or not it belongs to the class that levies such taxes, is compelled to pay a portion of such taxes as a system-wide operating expense of the company. All water users of the whole system are assessed solely for the benefit of the few who levy the assessment.

Of course, if all areas could, under the law, and did levy such taxes, which varied little in the percentage of gross revenues by which the tax is computed, the question here presented would be rather unimportant.

The Commission is of the opinion that, under the facts in this case, all of the company's water users residing in the areas, which neither levy license taxes upon the company's business nor receive franchise payments thereon, are being unfairly and unjustly discriminated against; and to a lesser degree the same is true as to the areas which either levy license taxes or receive franchise payments only in the amount of 2 per cent of the gross revenues.

Where such taxes or payments vary in rates among the areas served by the company, the effect is to burden consumers in some areas with a part of the taxes levied by other areas, unless the rates are adjusted to eliminate this effect. It is an unjust discrimination for the water consumers of one area to be burdened with any part of the taxes levied or payments exacted by another area.

This question of passing on to the subscribers city special taxes was dealt with by the Department of Public Service of the state of Washington, Department of Public Service v. Pacific Teleph. & Teleg. Co. (1940) 37 PUR NS 321. In that case seven out of numerous other cities served by the telephone company had levied city special taxes, and the company asked permission of the Department of Public Service to pass these taxes on to the subscribers in the cities where the taxes were levied. In passing upon this question, the Washington Department of Public Service said, at p. 405:

"It would be manifestly unfair to

impose upon the many thousands of telephone subscribers in this state, who live elsewhere than in the seven cities in which such taxes are now levied, the burden of providing the dollars necessary to pay occupation taxes in those cities. (It is no answer to say that the company should itself pay this tax, for the company must necessarily pay it out of dollars received from its subscribers. In our opinion, it is much more equitable to provide that the subscribers in the various cities should assume that responsibility, if such cities have used that method of providing additional tax revenue, than to require subscribers throughout the state to help carry the cost of paying the taxes exacted by these particular cities. There can be no doubt that an unjust and unreasonably discriminatory situation now exists in respect to these particular taxes, and that this burden must be placed where it should be, namely, upon the subscribers in the particular localities in which the taxes are levied.)

"Two methods have been suggested for accomplishing this end, one being to fix special exchange rates in the several localities in question sufficient to allow for these taxes under operating expenses, and the other to allow the pro rata passing on of the tax itself to the subscribers in the taxing localities, as proposed by the company.

"The second suggestion is more equitable. It has the advantage of immediately imposing upon ratepayers in any community which elects to derive revenue from such a tax, the burden of providing those dollars. Conversely, whenever any such tax is repealed by any of the levying cities, the subscribers in question will be relieved automatically and concurrently of the burden which has been imposed upon them by their own municipalities.

"An additional reason for this conclusion is that if we countenance the recurrent imposition of similar taxes by the host of municipalities in this state upon the various utilities subject to our jurisdiction, the inevitable result will be, as in this case, continually mounting operating expenses over which we can exercise no control. This may well lead to a procession of rate cases requiring the expenditure of much time and expense both by the utilities and by the Department.

"We, therefore, direct the company to pass on municipal occupation taxes."

The Michigan Public Utilities Commission in Re Detroit Edison Co. (1936) 16 PUR NS 9, at p. 24, in discussing a kindred subject, had the following to say:

"If any municipality in the territory of the Detroit Edison Company successfully maintains in the courts its position that it is entitled to rental for any of its public places, and if the Detroit Edison Company is compelled to pay to such municipality any amounts on account of such claims, it will certainly become the duty of this Commission to increase the electric rates and charges of the Detroit Edison Company in that municipality in an amount sufficient to offset anything the utility is compelled to pay on account of such claims asserted by such municipality.

"It would certainly be most unfair and unjustly discriminatory against the other localities if this were not done. The Commission is unable to say at this time just how such a charge

should be spread. The utility should certainly be allowed to reimburse itself from the ratepayers in any municipality which successfully maintained such a claim; and the rates in such municipality should be increased by this Commission in an amount sufficient to enable the utility to reimburse itself for any amounts it was so compelled to pay."

Nor do we view the authorization of rate adjustments designed to eliminate such inequities as constituting an interference by this Commission with the taxing power of any municipality of this state. We are of the opinion that this Commission has the power to prescribe rates for the company which will in effect make a proper allocation of the operating expenses of the company represented by such license tax and franchise payments and that in so doing we are not in any way encroaching upon or limiting the powers or rights of any municipality to assess or collect taxes. This conclusion is supported by State ex rel. Pacific Teleph. & Teleg. Co. v. Department of Public Service (1943) 19 Wash2d 200, 52 PUR NS 6, 58, 59, 142 P2d 498, in which the supreme court of Washington held as follows:

"There is no basis for the argument advanced by the cities to the effect that the Department is seeking to exercise the taxing power, or to interfere with the exercise of that power by the cities. The only question concerns the allocation of the moneys paid by respondent to the cities under a taxing ordinance or pursuant to franchise provisions, whether these payments will be included in respondent's general operating expenses or segregated and passed to the ratepayers in the respective municipal corporations to which the moneys are paid. . . .

"We are convinced that the Department, in so far as such taxes are concerned, has the power to fix special exchange rates applicable to the different communities, which will in effect require the ratepayers in each community to absorb a sum equal to the amount of the tax which respondent is required to pay to that municipality. More than this, the Department cannot do."

[3, 4] The Commission is of the opinion that the absorption as general operating expenses by the company of license taxes and franchise payments up to 2 per cent of its annual revenues to municipalities in which it operates under 20-year franchises should not be approved. According to the applicant's evidence, in the calendar year 1947, 45.8 per cent of its water was sold to, and 46 per cent of its revenue was paid by, consumers resident in areas in which no license taxes could be levied. Such consumers would have to share the burden of taxes levied by municipalities in which they did not reside if applicant were directed to charge any part of these taxes to general operating expenses. Nor do we find facts in the record which would warrant us in fixing the limit of the absorption at 2 per cent, or at any other figure. It is true that the record reveals that applicant did, in each case in which it voluntarily agreed to make annual franchise payments, set such annual payments at 2 per cent of its gross revenues in the municipality concerned. However, applicant's Exhibit "B" also shows that of the 28 cities with which applicant has franchise contracts, only 7 provide

for franchise payments. To thus exempt certain customers to the extent of 2 per cent of gross revenues would, in our opinion, result in unjust and unreasonable discrimination against customers resident in areas which either do not or cannot obtain license taxes or franchise payments aggregating 2 per cent of applicant's revenues.

In conclusion it is the considered judgment of this Commission that the consumers in any and all municipalities which seek to obtain revenue from such taxes or payments should bear the burden of providing such revenue. It would appear equally appropriate that upon discontinuance of such payments to any municipality, the consumers of that municipality should be relieved of the burden of paying such taxes or franchise payments. Such exactions, whether in the nature of license taxes, occupational taxes, street rentals, franchise payments, or any other similar or kindred tax, should be paid by the water consumers residing in the municipality which receive such taxes or payments. The allocation of such costs should be accomplished by and reflected in the rates themselves rather than by adding to each individual consumer's bill as a separate item thereof.

Entertaining these views, it is, therefore,

Ordered: 1. That the schedules of rates filed by the St. Louis County Water Company on October 25, 1948, now under suspension, be and the same are hereby denied and said applicant is hereby directed to withdraw said schedules.

Ordered: 2. That within fifteen days following the date of this report and order, the St. Louis County Water Company may submit for the consideration of this Commission schedules of rates containing the same basic rates and charges as now on file with the Commission and in effect, with provisions added thereto that all license taxes, occupational taxes, street rental fees, and kindred exactions imposed by any municipality or political subdivision and all franchise payments made to any such municipality or political subdivision shall be passed pro rata to the customers and users of the water service, residing in such municipality or political subdivision.

Ordered: 3. That this order shall become effective thirty days from the date hereof and the secretary of the Commission is hereby instructed to mail a certified copy of this report and order to all interested parties.

Re Jersey Central Power & Light Company

Docket No. 4362
September 28, 1949

APPLICATION *by gas utility company for authority to increase rates; denied.*

Revenues, § 2 — Estimates — Gas utility — Weather conditions.

1. An estimate of operating income under recently authorized gas rates cannot be accepted as representative of earnings which may be reasonably anticipated under normal conditions when they are based on experienced operating results during a year when there was abnormally warm weather, since an abnormally warm winter causes a marked curtailment in use of gas, p. 22.

Rates, § 187 — Burden of proof — Expected earnings.

2. An increase in gas rates should be denied to a company which bases its case on the level of the past year despite knowledge of improved earnings during the current year and of expected substantial savings and expenses, without introducing a forecast to reflect resulting anticipated improvements in earnings, p. 22.

APPEARANCES: Joseph F. Autenrieth, for the company; Daniel deBrier, Deputy Attorney General, for the Board of Public Utility Commissioners; Roberts & McInnis, by William A. Roberts and Francis J. Ortman, for Monmouth county, city of Asbury Park, and the boroughs of Deal and Bradley Beach; William T. Hiering, for borough of Seaside Park; Sam Kite, for Lakewood Taxpayers Association; Mrs. D. K. Gannett, pro se.

By the COMMISSION: Jersey Central Power & Light Company (hereinafter called company), filed on February 25, 1949, a revised schedule of rates for gas service involving an increase to all classes of customers, to be effective with bills rendered on and after April 1, 1949. The Board suspended the proposed rates pending hearing and determination and assigned April 12, 1949, as the date of hearing.

The record indicates that the company gave notice to its customers of the proposed change in rates by inserting advertisements in newspapers circulating in its service area. Notice of the time and place assigned for hearing was forwarded by this Board to the clerk of each of the municipalities served by the company.

Hearings were held at Newark on April 12, June 22, 29, 30 and July 6 and 7, 1949. The appearances entered

n this cause are shown above. The ecord consists of 816 pages of testi- mony, 30 exhibits by the company and 5 exhibits by the objectors. Briefs were filed by counsel for company and objectors.

The company's gas business is conducted in three divisional operations that are served by separate production facilities and are not interconnected by pipe lines, viz.: The Northern Division serving customers in Dover, Boonton, and adjacent territory; The Coast-Central Division serving customers in Asbury Park, Long Branch, Red Bank, Point Pleasant, Lakewood, Toms River, Beach Haven, and adjacent territory; The Southern Division serving customers in Ocean City, Wildwood, Cape May, and adjacent territory.

The present and proposed rates are shown below in comparative form:

Present Rates

1st 300 cu. ft. or less per month $1.05
Next 2,700 cu. ft. $.161 per 100 cu. ft.
Next 7,000 cu. ft. $.101 per 100 cu. ft.
Over 10,000 cu. ft. $.071 per 100 cu. ft.

Fuel Clause applies to all gas consumed.

Minimum Charges per meter:

5 lights	$1.05 per month
10–20 lights	3.00 per month
30–120 lights	5.00 per month
Over 120 lights	10.00 per month

Short-Term Seasonal Service:

A short-term seasonal charge of $1.00 per month shall be applied to the billings calculated under the above schedule of charges and rendered during the months of April to September, inclusive, to consumers connected between April 1st and September 30th of each year. When consumers connected between the aforesaid dates have received service continuously from the date of connection to the first meter reading of the next calendar year they shall be considered annual consumers and shall receive a credit on subsequent billings to the full amount of the seasonal charge paid.

Proposed Rates

1st 200 cu. ft. or less per month $1.50
Next 2,800 cu. ft. $.161 per 100 cu. ft.
Next 7,000 cu. ft. $.101 per 100 cu. ft.
Over 10,000 cu. ft. $.071 per 100 cu. ft.

Fuel Clause applies to all gas consumed.

Minimum Charges per meter:

5 lights	$1.50 per month
10–20 lights	3.00 per month
30–120 lights	5.00 per month
Over 120 lights	10.00 per month

Short-Term Seasonal Service:

A short-term seasonal charge of $1.50 per month shall be applied to the billings calculated under the above schedule of charges and rendered during the months of April to September, inclusive, to consumers connected between April 1st and September 30th of each year. When consumers connected between the aforesaid dates have received service continuously from the date of connection to the first meter reading of the next calendar year they shall be considered annual consumers and shall receive a credit on subsequent billings to the full amount of the seasonal charge paid.

The principal change incorporated in the proposed rate schedule involves an increase in the initial charge from $1.05 to $1.50 and a reduction in the quantity of gas allowed for said initial charge from 300 to 200 cubic feet per month. A corresponding change in the minimum charge provision is also proposed. The only other change proposed involves increasing the charge for seasonal or short-term service from $1 to $1.50 per month. For most customers, namely, those using at least 300 cubic feet per month, the company's proposal means an increase of 61 cents per month. The company asserts that the proposed rates aforementioned will increase its annual revenues by approximately $526,978 on the basis of 1948 sales.

This is the third application filed by this company for an increase in gas rates since 1946. By decision dated November 26, 1946, in Docket No. 2503, 66 PUR NS 129, the Board permitted the company to increase gas

rates on January 1, 1947. By decision dated September 8, 1948, in Docket No. 3789, 75 PUR NS 183, the Board authorized a further increase in gas rates to become effective with bills rendered on and after September 20, 1948. In the latter docket the increase in rates requested by the company was allowed in full. Based upon anticipated sales for the year 1948, it was estimated that these rates, which are now in effect, would produce an annual operating income of approximately $422,000.

[1, 2] The record in the present case (Docket No. 4362) indicates that without waiting a reasonable period of time to ascertain how actual operating income under present rates would compare with anticipated results, the president of the company employed a consulting engineer, about December, 1948 ". . . to undertake studies and consult with his staff in connection with the preparation of an application for a rate increase for gas service, and to prepare and present such exhibits and studies as were deemed essential in rate proceedings." Mr. Hoey, the company's comptroller, in presenting an estimate of operating income under present rates, testified ". . . we had to use a pro forma statement to reflect the condition at February 28, 1949, due to the fact that the company has not yet experienced the full impact of the rate increase of September 20, 1948 . . . ." Mr. Hoey estimated that present rates would produce an operating income of $310,526 before Federal income taxes and $275,092 after Federal income taxes. He arrived at this result by attempting to restate experienced operating results for the year ended February 28, 1949, on the assumption that present rates which became operative September 20, 1948, were actually in effect for the entire period covered by his estimate. In considering whether Mr. Hoey's estimate aforementioned can be accepted as representative of earnings that may normally be expected under present rates, it must be borne in mind that last winter was unusually mild and that gas sales, particularly for heating, were accordingly subnormal. The record indicates that ". . . the present winter has been about 25 per cent warmer in degree days than the winter of 1947–1948." The company's brief admits ". . . the well-known fact that in general residential and commercial sales there is an appreciable amount of incidental and supplementary heating during the cold months. An abormally warm winter causes a marked curtailment of such use." Without adjustment for the abnormal weather conditions aforementioned, it accordingly appears that Mr. Hoey's estimate of operating income under present rates cannot be accepted as representative of earnings which may be reasonably anticipated under normal conditions. As a matter of fact, the trend of operating income thus far in 1949 is definitely upward and monthly reports filed by the company with this Board indicate that for the first eight months of 1949 the company has already realized almost as much operating income as Mr. Hoey estimated for the full year.

Furthermore, it would seem that the following testimony by the vice president of the company, characterizing company estimates in general, may well be applicable in this situation: "I want to be perfectly frank to say to

you, as one of the men of management of Jersey Central, that all of the estimates that we have made and had made jointly, and with our company in the gas business, for the past three years, have been utter miserable failures."

In the statement accompanying its filing in this docket the company asserts that it became necessary to request a further increase in rates because of increases in labor costs since 1947 as well as increases in the cost of operating materials, taxes and other expenses, with the result that earnings have continued to decline through the year 1948. The company's brief refers to the increased rates here at issue as necessary to ". . . keep gas operations afloat (not designed to obtain an adequate return) . . . ." It appears, however, that even without an increase in rates, a much brighter future lies immediately ahead. The testimony and the statements in the company's brief clearly indicate that the receipt of natural gas on June 1, 1950 (or perhaps earlier if the company can complete a connecting pipe line sooner), will be accompanied by substantial savings in expenses and that in fact a reduction in rates consistent with a fair return can then be expected. The company's confidence that substantial savings will result from the introduction of natural gas is indicated by the following unequivocal testimony of its vice president: "I have every faith that the Ebasco Engineering Company and Allen Lockwood (consulting engineers employed by the company on natural gas matters), who is reputed to be one of the best gas men in the country, know how to estimate the results of natural gas and that indicates a very substantial saving in production cost." The record indicates that the aforementioned savings in production costs will amount to $1,113,000 during the very first year that natural gas becomes available. This saving is based upon utilization of natural gas in only the company's Coast-Central Division. From developments during the past few weeks it appears that the company also has relatively early prospects of obtaining natural gas for its southern division through facilities which the South Jersey Gas Company is planning to install. Further substantial savings in expenses are thus in prospect.

The company is concerned, however, that in the meantime (that is, pending the advent of natural gas), if the increased rates here requested are not allowed, it ". . . will operate at a deficit or at a return which will barely cover operating costs." Its fears in this respect now appear to be without foundation since the company has not operated in the red in any month this year and the earnings trend, as heretofore pointed out, is generally upward. Operating income for the first eight months of 1949 under present rates was approximately $292,000. For the comparable period last year under rates previously in effect the company's books indicated an operating loss of approximately $184,000. Both figures last mentioned are before Federal income taxes. Operating income before Federal income taxes in July and August of this year had risen to over $80,000 per month. It should be noted that the aforementioned current earnings are after giving effect to such increases in expenses as the company actually incurred. The year 1949 has

apparently brought an end to the rising trend in the cost of manufacturing gas. It is a well-known fact that the costs of materials and supplies required in the manufacture of gas have been leveling off and that significant declines in some important expense items have been experienced.

There are other factors in addition to those already alluded to which should also soon contribute to improved earnings. We have reference here to testimony that the company will shortly shut down its relatively high cost production facilities at Toms River and will, as a result of interconnection of distribution facilities to be completed in September of this year, supply the area formerly served by the Toms River plant with gas manufactured at its more efficient, lower cost Long Branch plant. There was also testimony to the effect that additional economies are expected to result from the company's modernization program. None of the aforementioned anticipated economies is, however, reflected in the pro forma income statements submitted by the company in this case.

It should be emphasized at this point that the Board's authority with respect to rates is prospective and not retrospective. The company's affirmative proofs, however, do not adequately reflect either earnings currently being experienced or those reasonably to be expected in the immediate future. The plain fact is that the company's case was based on the level of earnings experienced in 1948 and that despite knowledge of improved earnings thus far in 1949 and of the expected substantial savings in expenses hereinbefore referred to, the company introduced no forecast to reflect resulting anticipated improvement in earnings. In the opinion of the Board, the company is not entitled to any increase in rates, the present rates not being shown to be unjust, unreasonable, or insufficient, and that the relief here requested is not warranted under the proofs and circumstances of this case, the proposed increased rates not being shown to be just and reasonable. The application is therefore *hereby denied.*

CALIFORNIA PUBLIC UTILITIES COMMISSION

Re Soledad Warehouse Company

Decision No. 43188, Application No. 30501
August 9, 1949

APPLICATION *for authority to issue and sell preferred stock; granted subject to condition as to voting power.*

Corporations, § 18 — Voting rights — Preferred and common stock.

Purchasers of shares of preferred stock should have voting rights on a parity with the voting rights of holders of shares of common stock.

By the COMMISSION: Soledad Warehouse Co., a corporation, has applied to the Commission for an order authorizing it to issue and sell, at par, 200 shares of preferred stock ($20,000 par value) for the purpose of providing working capital.

Applicant is a California corporation organized on or about July 3, 1948. It is now engaged in the public utility warehouse business in Soledad, Monterey county, and in the operation of a lumber yard. In Exhibit "E" filed in this proceeding it shows, for the period from September 1, 1948, to May 31, 1949, inclusive, revenues from its warehouse operations at $32,416.83 and lumber yard sales of $5,390.84, with net income from its warehouse of $7,937.34 and a net loss from its lumber yard operations of $1,043.06. It reports its assets and liabilities, as of May 31, 1949, as follows:

Assets		
Current assets—		
Cash	$2,429.29	
Accounts receivable	7,522.29	
Accrued storage	2,357.76	
Inventories	12,702.28	
Total current assets		$25,011.62
Fixed assets—		
Land	6,153.77	
Warehouse	44,787.68	
Lumber yard	13,730.60	
	64,672.05	
Less—depreciation reserve	5,566.04	
Total fixed assets		59,106.01
Organization expense		873.68
Deferred charges		1,883.21
Total		$86,874.52
Liabilities		
Current liabilities—		
Notes and accounts payable	$22,691.10	
Accrued salaries	2,333.50	
Other current liabilities	654.13	
Total current liabilities		$25,678.73
Secured notes		12,603.80
Due to officers		5,000.00
Capital stock (common)		45,000.00
Deficit		(1,408.01)
Total		$86,874.52

It is reported that applicant recently has purchased the lumber yard, with its inventory of lumber, and that approximately $20,000 is needed for working capital in the lumber operations. Applicant proposes to obtain such sum through the issue of shares of preferred stock to its existing shareholders of record.

Applicant's authorized and outstanding capital stock consists of the following:

	Authorized		Outstanding	
	Shares	Par Value	Shares	Par Value
Common	1,000	$100,000	450	$45,000
Preferred	250	25,000	—	—
Total	1,250	$125,000	450	$45,000

The records of the Commission show that the outstanding $45,000 of common stock was issued pursuant to authority granted by Decision No. 42117, dated October 11, 1948, to the following individuals:

Thos. B. Porter	$17,500
J. F. Keough	17,500
Roy E. Prewitt and Minnie F. Prewitt, joint tenants	5,000
Odis D. Cunningham and Bernice Cunningham, joint tenants	5,000
	$45,000

The Articles of Incorporation provide, among other things, that the holders of the shares of preferred stock shall be entitled to receive cumulative dividends at the rate of 6 per cent per annum, payable in cash semiannually, or at such time as the board of directors may from time to time determine; that such shares are redeemable at applicant's option upon the payment of a premium of $2 a share; and that the holders of shares of common stock shall have the sole and exclusive right to notice of shareholders' meetings and the sole and exclusive voting rights, except as otherwise provided by law and except that in the event four or more semiannual dividends on the shares of preferred stock shall be unpaid in whole or in part, then and until all arrears shall have been paid together with the then current semiannual dividend, the voting rights of the holders of the common shares shall cease and such voting rights shall vest exclusively in the holders of the preferred shares.

The Commission does not favor the issue of nonvoting stock. It has taken the position that those who purchase shares of stock of a corporation, either preferred or common, should have voting rights in proportion to their investment in the enterprise. The preferred stockholders are not creditors, they cannot obtain a judgment against the corporation for failure to pay dividends, and, under this applicant's Articles of Incorporation, in the event of failure to receive dividends they must wait more than two years before they can exercise a voice in the management of the business and properties in which they share ownership. While it is true that in the present proceeding it is proposed to issue shares of preferred stock only to the holders of the presently outstanding common shares, there is nothing to prevent such holders from disposing of their shares of stock, either preferred or common, at a later date. In our opinion the purchasers of applicant's shares of preferred stock, from the date they acquire said shares, should have voting rights on a parity with the voting rights of the holders of the shares of common stock.

A review of the application indicates that applicant has need for additional working capital to improve and maintain its business. The order herein will authorize applicant to issue and sell said shares of preferred stock, pro-

vided it amend its Articles of Incorporation so as to give to the holders of shares of its preferred stock the same voting rights as now are given to the holders of shares of its common stock.

UNITED STATES DISTRICT COURT, D. DELAWARE

Re Commonwealth & Southern Corporation

Civ. A. No. 1175
84 F Supp 809
July 6, 1949

PETITION *by Securities and Exchange Commission for court enforcement of holding company liquidation plan; order approving plan granted.*

Intercorporate relations, § 19.8 — Holding company simplification — Due process.

1. An order of the Securities and Exchange Commission approving an amended plan for holding company liquidation did not constitute a denial of due process of law where it was based upon a full and fair hearing, p. 28.

Corporations, § 15.1 — Holding company dissolution — Fairness of plan.

2. A holding company dissolution plan may be fair, equitable, and constitutional although contractual rights of security holders may be affected, and regardless of stockholders' approval by vote or otherwise, p. 28.

Corporations, § 15.1 — Holding company dissolution — Noncompliance with state law.

3. That a holding company dissolution plan, under the Holding Company Act, may not comply with state law does not render the plan unconstitutional, p. 28.

Appeal and review, § 28.9 — Findings of Securities and Exchange Commission — Holding company liquidation.

4. Findings of fact of the Securities and Exchange Commission as to the value of a holding company's assets to be distributed pursuant to a holding company liquidation plan are conclusive if supported by substantial evidence and arrived at in accordance with legal standards, p. 29.

APPEARANCES: Harry G. Slater, Sidney Shemel, and Joseph M. Paul, Jr., of Washington, D. C., for the Securities and Exchange Commission; George Roberts, John C. Weadock, Hayden N. Smith, Allison Choate, and George L. Brain (of Winthrop, Stimson, Putnam & Roberts), of New York city, for Commonwealth & Southern Corporations; Alfred J. Snyder

and Elizabeth C. Lownsbury, of Philadelphia, common stockholders, for themselves, various other common stockholders, and option warrant holders; George S. Munson (of Townsend, Elliott & Munson), of Philadelphia, for Edward Hopkinson, Jr., et al., as Committee for Preferred Stockholders of Commonwealth & Southern Corporation; William Clarke Mason, Thomas B. K. Ringe, H. Orvel Sebring, Jr., and Martin P. Snyder (of Morgan, Lewis & Bockius), of Philadelphia, and Garfield Scott, of Philadelphia, for The United Gas Improvement Corporation, a preferred stockholder; John Schulman (of Hays, St. John, Abramson & Schulman), of New York city, for Arthur W. Loew, a common stockholder; Lawrence E. Brown, of Scottsboro, an option warrant holder, for himself and other option warrant holders; M. Victor Leventritt, of New York city, for Adelaide H. Knight, option warrant holder; George Rosier, of New York city, for Investment Associates, a common stockholder; Samuel Zinman, of New York city, a preferred stockholder, for himself and preferred stockholders.

LEAHY, Chief Judge: This case involves an amended plan of The Commonwealth & Southern Corporation, a registered holding company, filed under § 11 (e) of the Public Utility Holding Company Act of 1935.[1] The SEC entered its findings and opinions[2] and at the request of The Commonwealth & Southern Corporation applied to this court to enforce and carry out the amended plan.

The amended plan has received the approval of the Preferred Stockholders' Committee, the largest holder of preferred stock and substantial groups of common stockholders, including the largest holder of common stock. Mr. Snyder and Miss Lownsbury, representing certain common stockholders and option warrant holders, object. Various persons owning option warrants or preferred stock also object to the fairness of the allocations.

The Snyder-Lownsbury objections are: (1) procedural; (2) constitutional; and (3) as to the fairness of the allocations.

[1–3] 1. There is no merit to the procedural objection. The order approving the amended plan was based upon a full and fair hearing and the charge of unconstitutionality for lack of due process is without foundation. Other charges as to constitutionality have been considered. Courts which have passed upon similar objections have decided that a plan may be fair and equitable and constitutional although contractual rights of security holders may be affected, in Re Community Gas & Power Co. (1947) 70 PUR NS 306, 71 F Supp 171, affirmed (1948) 77 PUR NS 161, 168 F2d 740, certiorari denied, Caplan v. Securities and Exchange Commission (1948) 334 US 846, 92 L ed 1770, 68 S Ct 1516; in Re Standard Gas & E. Co. (1945) 61 PUR NS 175, 151 F2d 326, certiorari denied, Guaranty Trust Co. v. Securities and Exchange Commission (1946) 327 US 796, 90 L ed 1022, 66 S Ct 820, and this applies regardless of stockholder approv-

[1] 15 USCA § 79k (e).

[2] See Holding Company Act of 1935 Releases Nos. 8498, September 9, 1948, and 8633 (1948) 79 PUR NS 346 for a complete background of Commonwealth & Southern and the SEC's analysis of the plan and as amended for fairness and equity.

al by vote or otherwise. In Re Illinois Power Co. (1947) 72 PUR NS 510, 74 F Supp 317, affirmed, in Re North American Light & P. Co. (1948) 78 PUR NS 337, 170 F2d 924; Phillips v. Securities and Exchange Commission (1946) 63 PUR NS 243, 153 F2d 27, certiorari denied (1946) 328 US 860, 90 L ed 1630, 66 S Ct 1350. As to the general charge that the act is unconstitutional, there has been full compliance with notice and opportunity to be heard and this objection is foreclosed by decisions upholding the constitutionality of § 11. North American Co. v. Securities and Exchange Commission (1946) 327 US 686, 90 L ed 945, 62 PUR NS 257, 66 S Ct 785; American Power & Light Co. v. Securities and Exchange Commission (1946) 329 US 90, 91 L ed 103, 66 PUR NS 33, 67 S Ct 133. And, even if the plan of liquidation may not comply with the Delaware Corporation Law, this does not give a different constitutional result. New York Pub. Service Commission v. Securities and Exchange Commission (1948) 73 PUR NS 38, 166 F2d 784, certiorari denied (1948) 334 US 838, 92 L ed 1763, 68 S Ct 1495.

[4] 2. The argument that the allocation of the assets is not fair and equitable must likewise be decided against Snyder-Lownsbury and other objectors. The SEC's findings of fact as to the value of the assets to be distributed are conclusive if supported by substantial evidence. So, too, the SECs' findings as to valuation based on judgment, prediction, and expert-guess, are not subject to reëxamination by this court where they are supported by substantial evidence and were arrived at in accordance with legal standards. Securities and Exchange Commission v. Central Illinois Securities Corp. (1949) 338 US 96, — L ed —, 80 PUR NS 282, 69 S Ct 1377. The allocation of 2.80 shares of Consumer Power Company common stock, .55 of a share of Central Illinois Light Company and $1 cash, to The Commonwealth & Southern's preferred stockholders, with the residual assets going to its common stockholders, meets the test so recently announced by the Supreme Court. Regrettable that the holders of option warrants do not participate at all under the amended plan, nevertheless, the SEC's action has not been contrary to law and its findings are sustained by adequate evidence.

An order of approval may be submitted.

WISCONSIN PUBLIC SERVICE COMMISSION

Re Village of Shell Lake

CA-2546
November 4, 1949

SUPPLEMENTAL ORDER *with respect to application of municipal water plant for authority to extend water mains and erect an elevated tank; authority to construct water tank rescinded.*

Municipal plants, § 21 — Construction of water tank — Rescission of authorization.

Authorization for the construction of a steel tower and water tank by a municipal plant should be rescinded where the utility has failed to construct the tank within the time prescribed by the Commission, since it is not the policy of the Commission to grant or continue in effect indefinitely authorization for projects not imminently necessary.

By the COMMISSION: The Commission's order of July 26, 1947, in its docket CA–2546 authorized the village of Shell Lake, Washburn county, as a water public utility, to extend existing mains approximately 3,300 feet, and to erect a steel tower and water tank of about 50,000 gallons capacity at an estimated cost of approximately $30,000 upon a condition that construction actually start within one year of the date of the order. Jurisdiction was retained.

On January 14, 1949, the village informed the Commission that main extensions had been completed at a cost of $9,443.48, but no action had been taken toward the construction of an elevated tank. From other correspondence in Commission files it appears the village has no intention of presently proceeding with the construction of an elevated tank and has inquired as to the procedure for making application for authority to construct a new well. The village board has decided a greater need exists for a new well than for an elevated reservoir.

The Commission's order of July 26, 1947, contemplated that the village would proceed without unnecessary delay with the construction authorized. More than two years have passed since authorization was granted and the village is still undecided as to the necessity for the elevated tank project. It appears that its construction will be delayed indefinitely.

It is not a policy of this Commission to grant or continue in effect indefinitely authorization for projects the necessity of which is not imminent. Authorization for the construction of a steel tower and 50,000-gallon tank will therefore be rescinded without prejudice and the village may file a new application when it is actually ready to proceed with construction.

The Commission finds:

1. That the village of Shell Lake has not exercised the authorization to construct an elevated water storage tank within the time prescribed.

2. That the village does not propose to start construction of this elevated tank in the foreseeable future.

ORDER

It is *ordered:* That the authorization contained in Commission order of July 26, 1947 to erect a steel tower and water tank of about 50,000 gallons capacity at an estimated cost of approximately $20,000 is hereby rescinded.

Re Kentucky Utilities Company

Docket No. E-6239
October 25, 1949

APPLICATION *for authority to issue securities, or in the alternative, dismissal of the application for want of jurisdiction; dismissed for want of jurisdiction. For ruling by Kentucky Commission, see (1949) 80 PUR NS 129.*

Interstate commerce, § 81 — Jurisdiction of Federal Commission — Effect of state control.

The Federal Power Commission does not have jurisdiction over the issuance of securities by a public utility company where the state Commission of the state in which the company is organized and operating has statutory jurisdiction over such issues, even though the state statute exempts security issues subject to Federal control.

By the COMMISSION: On October 4, 1949, applicant, which is organized and operating within the state of Kentucky, filed an application relating to the issuance of 25,000 shares of 4¾ per cent preferred stock par value $100 per share to be underwritten and 165,000 shares of common stock to be offered to stockholders and employees. It requested the Federal Power Commission to disclaim jurisdiction over the proposed security issue or, in the alternative, to authorize the issue and sale of the securities.

On October 19, 1949, the applicant filed Amendment No. 1 to its application by which, among other things, it submitted a copy of an order of the Public Service Commission of Kentucky finding that it has authority to regulate the issuance of the above securities and approving their issuance. ([1949] 80 PUR NS 129). At the same time, applicant submitted a memorandum of counsel analyzing § 204 of the Federal Power Act and § 278.300 of the Kentucky Revised Statutes relative to the issuance of securities and coming to the conclusion that the security issue was under the jurisdiction of the Kentucky Commission and that therefore the application before this Commission should be dismissed for want of jurisdiction.

By letter dated October 20, 1949, in response to a request from this Commission addressed to the Public Service Commission of Kentucky, the attorney general of Kentucky submitted his opinion as to the jurisdiction of the Kentucky Commission to regulate the proposed issuance of securities.

On October 24, 1949, applicant filed Amendment No. 2 to its application by which it submitted its application to, and an order of the Railroad and Public Utilities Commission of Tennessee,

approving the issuance of the above securities.

Written notice of the application has been given to the Public Service Commission of Kentucky and the Railroad and Public Utilities Commission of Tennessee and to the governor of each of those states. Notice of the application was also published in the Federal Register on October 11, 1949 (14 FR 6159), stating that any person desiring to be heard or to make any protest with reference to the application should file a petition or protest on or before October 24, 1949. No protest or petition or request to be heard in opposition to the granting of the application has been received.

The Kentucky statute conferring jurisdiction upon the Public Service Commission of Kentucky to regulate issuance of securities by a utility contains an exemption reading (Kentucky Revised Statutes § 278.300):

"(10) This section does not apply in any instance where the issuance of securities or evidences of indebtedness is subject to the supervision or control of the Federal government or any agency thereof . . . ."

The Federal Power Act has a corresponding exemption (§ 204(f)):

"(f) The provisions of this section shall not extend to a public utility organized and operating in a state under the laws of which its security issues are regulated by a state Commission."

Thus, by the literal language of the two statutes a perfect impasse would be established and the jurisdiction of neither Commission could be firm unless the other Commission properly construed its act as not applying. We believe we can resolve the difficulty by such a construction of our act. Our consideration of the question leads us to conclude that the Kentucky Commission and this Commission approach the question of jurisdiction over this proposed issuance of securities on a par.

We think we should remove the impasse resulting from the wording of the state and Federal acts by construing our act, notwithstanding its literal terms, as not intended to apply in a situation like the present. This construction we believe to accord with what we conceive to be the policy of Congress not to provide Federal regulation of a security issue where, absent such regulation, statutory provision for Commission regulation by a state in which the public utility is organized and operating will be operative. If we are correct in this interpretation of our statute, the applicant's proposed issuance of securities will not be subject to our "supervision and control" and will not thereby come within the terms of the Kentucky statute's exemption.

The Commission finds: The proposed securities will be issued by a public utility organized and operating in a state under the laws of which its security issues are regulated by a state Commission within the meaning of § 204(f) of the Federal Power Act.

The Commission *orders*: The application be and the same hereby is dismissed.

Industrial Progress

A digest of information on new construction by privately managed utilities; similar information relating to government owned utilities; news concerning products, supplies and services offered by manufacturers; also notices of changes in personnel.

Bulletin on Remington Rand "Foremost" Steel Desks

A NEW booklet on Remington Rand's latest line of "Foremost" Steel Desks is now available.

Pointing out that the Foremost line "embodies a new concept of the desk as an efficient tool for business," the 20-page, illustrated booklet describes its various revolutionary departures in design from standpoints of appearance and usefulness, and includes a detailed list of specifications for the desks.

One of the salient features of Foremost desks in their use of interchangeable pedestals and tops, permitting a wide choice of desk assemblies to suit different office needs.

Another, according to the booklet, is the elimination of waste space that has been achieved by smaller, more functional sizing, and permits the comfortable use of four Foremost desks in a space ordinarily used for three.

The booklet, identified as FF-115, can be obtained at any Remington Rand Branch Office or by writing to the home office at 315 Fourth avenue, New York 10, New York.

American Coach & Body Names Hall as Director of Sales

THE AMERICAN COACH & BODY COMPANY, Cleveland, Ohio, manufacturers of utility truck bodies, announces the appointment of Fred C. Hall as director of sales, succeeding Clarence G. Wood.

Mr. Hall has been a member of the American organization since 1936. He has had an extensive background in the utility business. After serving as an engineer on the Sinclair Pipe Lines he joined the Lincoln Telephone & Telegraph Company at Lincoln, Nebraska. During his several years with Lincoln he moved up up the ladder from ground man, lineman, repairman to supervisor of motor equipment. This experience has been valuable to the customers of The American Coach & Body Company which specializes in motor trucks for the utility industry.

20% Sales Increase Expected In 1950 by GAMA

SALES of gas appliances and equipment in 1950 will exceed 1949 totals and, in every division of the industry, will far exceed and in some classifications, more than double prewar averages, according to a recent poll made among the 550 gas appliance and equipment manufacturer members of the Gas Appliance Manufacturers Association. This will bring industry sales close to its 1947-1948 all time peaks.

To reach these goals, manufacturers will intensify sales training, improve dealers' sales aids, and introduce more creative selling techniques among their dealers' outlets and salesmen. Approximately 50 per cent of the manufacturers polled intend to increase their sales forces.

Analyses of manufacturers' estimates of 1950 sales indicate an expected 20 per cent to 30 per cent increase in gas range sales over 1949. Greater increases are expected in the sales of incinerators, refrigerators, and clothes dryers.

Sales of gas-fired central heating equipment, manufacturers expect, will be 30 per cent over 1949. Floor furnaces and direct heating equipment are expected to be about 20 per cent greater. Automatic water heater sales are also expected to make substantial gains.

ASME Medal Awarded to Fred L. Dornbrook

THE ASME Medal, highest honor of the American Society of Mechanical Engineers, conferred annually for distinguished service in engineering and science, was awarded to Fred L. Dornbrook, general consultant, power plant department, Wisconsin Electric Power Company, Milwaukee, for "outstanding engineering in the research, design, and operation of pulverized fuel combustion equipment."

The award carried the citation: "Starting his engineering career as a coal passer on a lake boat, he advanced rapidly to positions of increasing opportunity and responsibility in electricity generating stations. He early visualized the possibilities of burning pulverized coal for the generation of steam, and rendered outstanding service through untiring effort in the pioneer development, design, and operation of pulverized coal-fired power-generating plants."

G-E Expands Transformer Mfg. & Testing Facilities

EXPANSION of the General Electric Company's transformer manufacturing and testing facilities at Pittsfield, Massachusetts, which will more than double the company's power transformer production capacity, was announced by Robert Paxton, manager of the G-E transformer and allied product divisions.

The new facilities, costing "several million dollars," are expected to be placed in operation about the middle of 1950.

The expansion will permit the testing, assembling, and shipping of three-phase power transformers with more than twice the capacity

of any transformers yet built and will make it possible to test transformers as large as any that may be built in the foreseeable future.

The expanded facilities are part of General Electric's postwar expansion program and the tests to be conducted there are based on research at the G-E high voltage engineering laboratory, recently completed.

S. W. Rolph Elected President of Exide

S. W. ROLPH, executive vice president, The Electric Storage Battery Company, Philadelphia, has been elected president, effective January 1, 1950, to succeed R. C. Norberg, who has been elected chairman, board of directors.

Pole Derricks Now Made Of Alcoa Aluminum

UTILITY type pole derricks are now being manufactured of Alcoa aluminum by two midwestern companies, Eagle Manufacturing Company, (a division of The Four Wheel Drive Auto Co.), Appleton, Wisconsin, and American Coach & Body Company, Cleveland, Ohio. This newly-available equipment, which is mounted on trucks for the placement of telephone and utility poles, represents a weight saving of about 50 per cent over conventional pole derricks.

Light weight is important because it is necessary for utility truck crews to assemble and disassemble the unit frequently. Strength is not sacrificed, however, for ease of handling. According to the results of comprehensive tests, the aluminum pole derricks now available equal the strength of the equipment that they replace.

The use of aluminum in such equipment is not entirely new. In recent years the desirability of light weight pole derricks has prompted several utility companies to fabricate aluminum units in their own maintenance shops with the help of Alcoa engineers. As these units were proved in actual service, American Coach & Body Company and Eagle Manufacturing Company became interested in producing them as a commercial product. Utility type pole derricks of aluminum may now be obtained through either of these companies, and indications are that other manufacturers will soon go into production.

Utility Field One of Largest Users of Two-way Radio

OVER 34,000 radio transmitters will be operating in 925 communications systems in the electric utility industry in 1951, it was predicted by J. W. Bryant, a General Electric communications engineer, in a recent talk before the Wisconsin Utilities Association. The industry had 10 transmitters operating in four systems in 1936, he said.

Mr. Bryant forecast wide application of

(*Continued on page* 24)

SUNSTRAND

For Guy and Suspension Lines —and Other Utility Uses

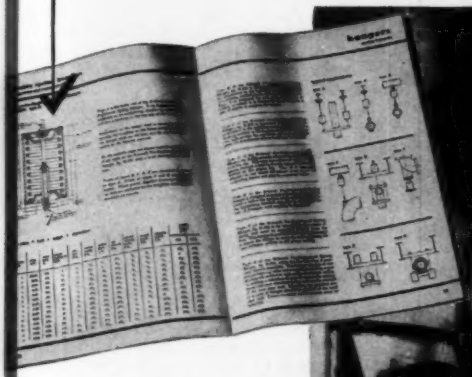
Uniform • Strong • Long-Lived • Economical

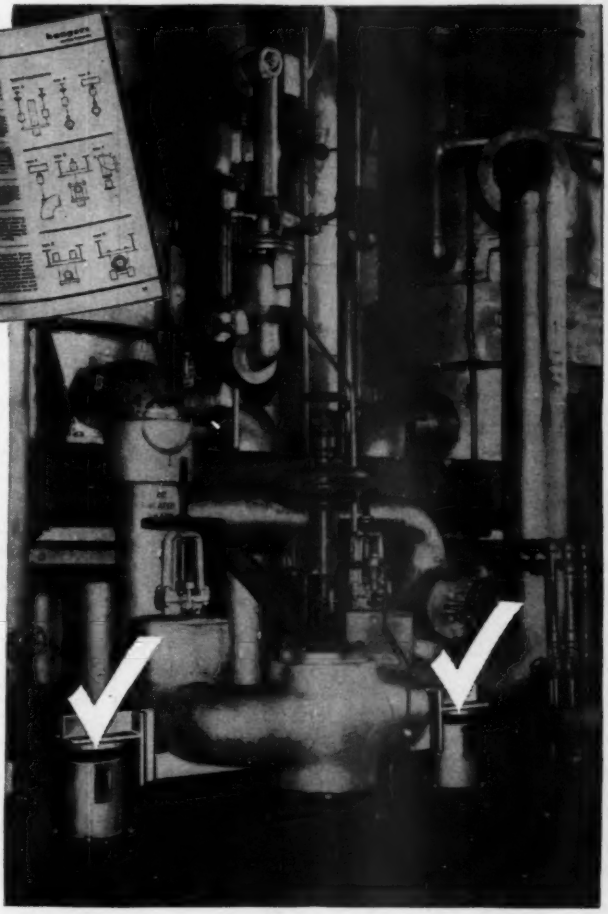
Sunstrand Wire Rope is made on the most modern wire rope machines in use today. All types and sizes are available including 1 x 7 construction galvanized steel strand made to ASTM specifications.

Write today for our price list and complete information on Sunstrand Wire Rope for utility uses.

SUNBURY WIRE ROPE MANUFACTURING COMPANY
880 South Second Street, Sunbury, Pa.

he problem was "special" ut the solution came "out of stock"





s of heater drain piping in the bine room of the new Southwark ion of the Philadelphia Electric npany had to be supported some-. It had to be flexibly supported use of the travel between its "hot" "cold" positions. The ceiling was feet up so overhead suspension out. Could it be supported from floor? The problem had already n anticipated by Grinnell with r Pre-Engineered Spring Hanger B268: type F, described in the new nnell Pipe Hanger Catalog 10D. s hanger is available in 14 sizes a range of load capacities from to 4800 lbs.

enty of other piping support prob- are pre-solved economically for in this combination catalog and ual . . . with ready-to-install hang- and supports . . . all available from veniently located Grinnell ware- es. Why not write today for your of Catalog 10D?

GRINNELL

ll Company, Inc., Providence, R. I. Branch warehouses: Atlanta • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston
Beach • Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

for the wrenches make the Penn-Union connector more practical—you grip it from ANY angle, with ANY kind of wrench (box, socket or open-end).

If you have ever spliced wires and cables in real mean locations, you probably are a strong "booster" for Penn-Union Connectors—

Because you know how much easier they are to use in close quarters: Working up against a wall . . . squeezing into small boxes, to join short ends of stiff wire . . . reaching around pipes, and splicing wires in dark holes where you can hardly see.

Developed by 20 years of constant improvement. Accurately made, with rigid engineering inspection. Re-usable over and over. Can be furnished in Bronze or Aluminum.

Sold by Leading Wholesalers

PENN-UNION ELECTRIC CORP., ERIE, PA.

The COMPLETE Line of Conductor Fittings

PENN-UNION
CONDUCTOR FITTINGS

point-to-point microwave communications fill growing requirements of the industry. H pointed out that the Federal Communicatio Commission has recognized the need for e panded frequency space by opening up ne point-to-point frequencies in the 900, 2,000, a 6,000 mc. regions for utility communicatio use.

The vast development of electric power h placed an increased premium on service r liability, Mr. Bryant explained. Expansion distribution facilities has extended the overa exposure of systems to storms, accidents, a other emergencies in wide-spread localiti The direction of mobile crews in these ca parallels the coördination of armed forces the field of battle. Lack of adequate co munications would mean lowered efficien confusion and danger to personnel. The indu try knows this and is one of the largest use of two-way radio communications.

New York State Elec. & Gas Expands Goudey Station

GROUND-BREAKING and dedication ceremoni held November 30th, marked the start a construction program that will increase t production capacity of the New York St Electric & Gas Corporation's electric gener ing station at Westover from 94,000 to 169,0 kilowatts.

The station was formally renamed Goud station as a tribute to William B. Goud retired vice president of the company and former member of its board of directors. formerly was known as Westover station.

The expansion of Goudey station is a part the company's $54,300,000 new construct program during the three years ending in 19 The new unit will provide facilities to repla in part power now purchased and to meet i creasing demands for electricity in the Tri Cities and a radius of 100 miles.

Other major phases of the program now u der way include: Expansions that will dou the production capacities of Greenidge stati Dresden, to 88,000 kilowatts next spring a Jennison station, Bainbridge, to 70,000 ki watts next summer; and construction of n substation and transmission facilities.

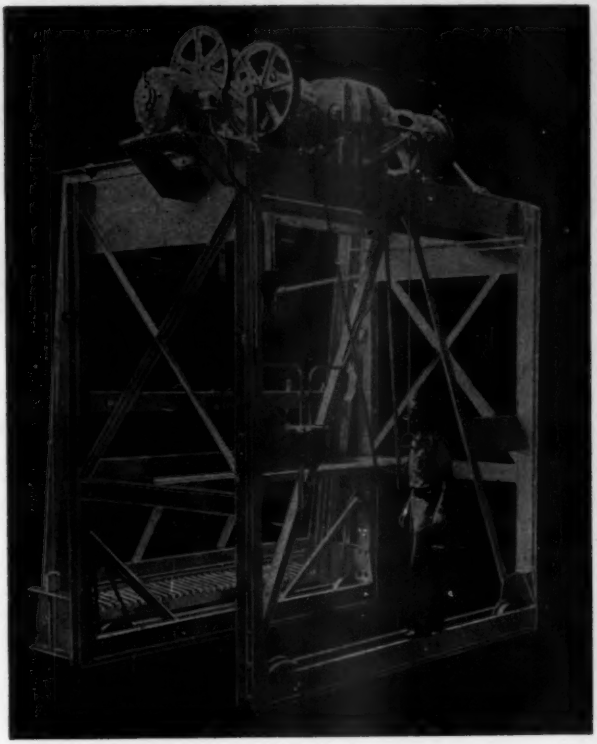
Heath Tree Appointments

MILTON W. HEATH, president and gene manager of Heath Tree Service, In Wellesley, Massachusetts, recently announc the following promotions in his gas leak loc tion organization.

Charles A. Heath, who is rated as the be qualified survey engineer in the business, a has been field operations supervisor is now v president in charge of operations. His offi is at 18 South Main street, Richmond, Mic igan.

George A. Muldoon, who was first employ by the company as chief accountant and la made office manager has been elected an offic of the corporation as assistant treasurer. M Muldoon is located at the headquarters offi of the company in Wellesley, where he will co tinue in both of the above capacities.

NEWPORT NEWS MECHANICAL RACK RAKE



WATER users troubled with trash are invited to write for new descriptive rack rake catalog.

THE Newport News Mechanical Rack Rake is a power-operated rake for cleaning trash racks at water intakes for hydroelectric plants, steam plants, pumping stations, canals and similar installations. It cleans the rack bars of trash and reduces a former major hand operation to one of minor periodic activity. With Newport News Mechanical Rack Rake installations, one man per shift can, under ordinary conditions, keep the racks clean for a dozen bays.

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

NEWPORT NEWS, VIRGINIA

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

how to plan

rate structures that attract

new capital

THE PROBLEM:

To provide adequate earnings in the face of

- increased operating expenses
- growing plant investments with higher new money costs
- expanding and changing loads

THE SOLUTION: LET EBASCO HELP YOU

MAKE SOUND PLANS

1. Its recommendations are backed by 40 years of operating and consulting experience.

2. Its solutions are practicable and workable.

EBASCO
SERVICES
INCORPORATED

TWO RECTOR STREET
NEW YORK 6, N. Y.

ENGINEERS • CONSTR
EBASCO
BUILDERS CONSULT

• Appraisal • Budget • Business Studies • Consulting Engineering • Design & Construction • Financial • Industrial Relations • Inspection & Expediting • Insurance & Pensions • Purchasing • Rates & Pricing • Research • Sales & Marketing • Systems & Methods • Taxes •

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

MERCOID

AUTOMATIC CONTROLS
FOR INDUSTRIAL APPLICATIONS
REQUIRING POSITIVE CONTROL
OF PRESSURE, TEMPERATURE,
LIQUID LEVEL ETC.

SIMPLE TO ADJUST FOR THE
SPECIFIED OPERATING RANGE

MERCOID CONTROLS ARE EQUIPPED
WITH MERCURY SWITCHES, THEREBY
INSURING GREATER SAFETY, BETTER
PERFORMANCE AND LONGER CONTROL LIFE

WRITE FOR CATALOG 600-B.

THE MERCOID CORPORATION
4201 BELMONT AVE. CHICAGO 41, ILL.

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

How attractive can a Substation be?

Maybe you've hesitated to take advantage of the many benefits of locating your substations close to the load because you were afraid of the reaction of placing substations in residential districts.

Other utilities felt the same way too, until they investigated the advantages of General Electric unit substations outlined by our engineers.

They were told that substations literally can be "dropped" in anywhere on the system to take care of present and future load demands.

And with a little incidental landscaping, the substations became an inconspicuous part of the community.

We'd like to show you more examples of how other utilities integrated G-E unit substations into their planning. We'd also like to tell you about the many advantages—such as lower costs and increased reliability—of G-E load center power distribution. Give us a call at the office, or write for brochure GEA-5155 that shows how other utilities took advantage of G-E engineering and service. *Apparatus Department, General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

Can You Be Confident?

IF in conjunction with your next annual meeting—or at some contemplated special meeting—proposals other than routine are to be voted upon—to raise debt ceiling—authorize new securities—grant conversion privilege for convertible bonds, etc.—can you feel confident that your stockholders will support management's recommendations with adequate votes of approval—on time?

Such an important meeting frequently merits provision of special handling—utilizing the services of our proxy soliciting organization as a form of insurance that the meeting will be successfully held on scheduled date.

Our record of p ·formance for the utility industry is outstanding. We invite your inquiry for additional information.

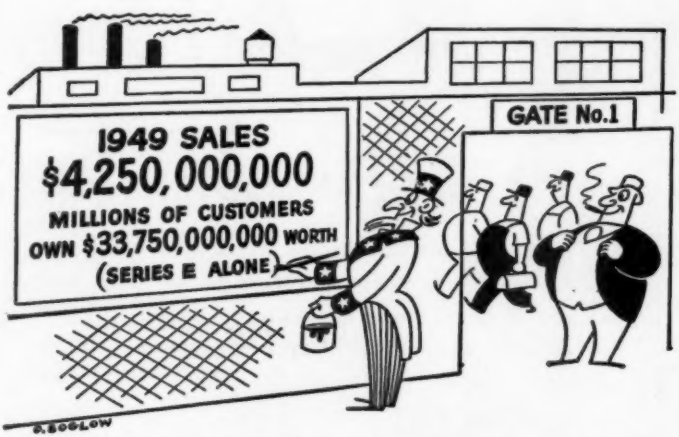
National or Sectional Coverage

◆ ◆

DUDLEY F. KING

Associates:
JOHN H. C. TEMPLETON • CHARLES A. NICHOLLS • PHILIP H. CARPENTER • WARREN W. AYRES

70 PINE STREET, NEW YORK 5, NEW YORK



SAVINGS BONDS BUSINESS IS GOOD

and is good for business!

Your company benefits both directly and indirectly as you boost sales of U. S. Savings Bonds through the Payroll Savings Plan.

Direct benefits include decreases in absenteeism, labor turnover, and accidents—with a corresponding increase in production. *This has been demonstrated in more than 20,000 companies operating the plan.* Workers who invest regularly in Savings Bonds—the easy, automatic Payroll Savings way—become better workers. They feel more secure . . . are steadier and more careful in their work.

Indirect benefits accrue from the effect of Bond sales on the national economy. Bond dollars add up to a tremendous backlog of purchasing power—money that will buy *your* products or services in the years to come. What's more, Bond sales improve the equilibrium of our economy by spreading the national debt.

The experience of companies throughout the nation indicates that at least half of your employees can be persuaded to join Payroll Savings—without high-pressure selling. (The nation's biggest advertising program—built with *donated* space, time and services—is creating universal awareness that Savings Bonds pay $4 for $3 when they mature.)

For all the help you need, get in touch with your State Director, U. S. Treasury Department, Savings Bonds Division—or the Treasury Department, Washington, D. C.

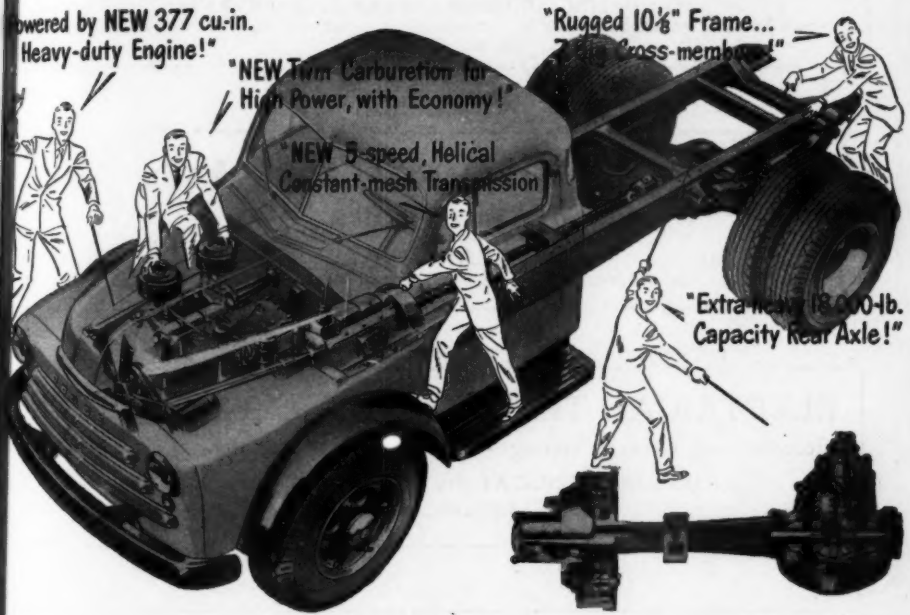
The Treasury Department acknowledges with appreciation the publication of this message by

PUBLIC UTILITIES FORTNIGHTLY

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

BIG NEWS for haulers of BIG LOADS!

New Heavy-Duty 4-TON DODGE "Job-Rated" TRUCKS


Powered by NEW 377 cu.-in. Heavy-duty Engine!"
"NEW Twin Carburetion for High Power, with Economy!"
"NEW 5-speed, Helical Constant-mesh Transmission"
"Rugged 10⅛" Frame...
"Extra-heavy 18,000-lb. Capacity Rear Axle!"

There's a new champion in the HEAVY-DUTY truck field. It's the new Dodge truck rated at 28,000 pounds G.V.W. . . . 50,000 pounds G.C.W.

Ample "*Job-Rated*" POWER flows from one of the finest-performing, and most economical truck engines ever designed. It develops 154 gross horsepower, and 330 pound-feet gross torque.

This remarkable engine contains such advanced long-life features as Silchrome intake valves and inserts. Exhaust valves are Stellite-faced and sodium-filled to resist warping, wear longer.

Features are numerous: Hydraulic valve lifters; two downdraft carburetors with dual intake manifold; dual exhaust system; high anti-vapor-lock pump; ceramic fuel filters; velocity-type governors; oil-bath air cleaners, and many others.

This "Job-Rated" load lugger has a new and rugged constant-mesh, 5-speed helical transmission, direct-in-fifth, with an extremely high torque input. A 5-speed overdrive transmission is available.

This 4-tonner has a rugged 10⅛-inch frame, with 7 and 8 big crossmembers; extra-heavy 18,000- and 22,000-pound capacity rear axles, and many other HEAVY-DUTY features you'll want to study and compare.

See your Dodge dealer at your earliest convenience.

FOR THE GOOD OF YOUR BUSINESS . . . SWITCH TO DODGE "*Job-Rated*" TRUCKS

This page is reserved under the* MSA PLAN *(Manufacturers Service Agreement)

PROFESSIONAL DIRECTORY

• This Directory is reserved for engineers, accountants, rate experts, consultants, a others equipped to serve utilities in all matters relating to rate questions, appraisa valuations, special reports, investigations, financing, design, and construction. »

THE AMERICAN APPRAISAL COMPANY

ORIGINAL COST STUDIES • VALUATIONS • REPORTS
for
ACCOUNTING AND REGULATORY REQUIREMENTS

NEW YORK WASHINGTON CHICAGO MILWAUKEE SAN FRANCISCO
and other principal cities

DAY & ZIMMERMANN, INC.

ENGINEERS

NEW YORK PHILADELPHIA CHICAGO

DESIGN, CONSTRUCTION, INVESTIGATIONS, REPORTS, APPRAISALS AND MANAGEMENT

ELECTRICAL TESTING LABORATORIES, INC.

Electrical and General Testing — Inspections — Research — Certification

2 EAST END AVENUE AT 79th STREET, NEW YORK 21, N. Y.
BUtterfield 8-2600

F B&D

Ford, Bacon & Davis

VALUATIONS REPORTS **Engineers** CONSTRUCTION RATE CASES

NEW YORK • PHILADELPHIA • CHICAGO • LOS ANGELES

GILBERT ASSOCIATES, INC.

ENGINEERS
Steam, Electric, Gas
Hydraulic, Sanitation
Designs and Construction
Inspections and Surveys
Feed Water Treatment

POWER ENGINEERING SINCE 1906

Serving Utilities and Industrials

Reading • New York • Houston
Philadelphia • Washington

SPECIALISTS
Purchasing and Expediting
Rates, Research, Reports
Personnel Relations
Original Cost Accounting
Accident Prevention

PROFESSIONAL DIRECTORY *(continued)*

FREDERIC R. HARRIS, INC.
FREDERIC R. HARRIS ENGINEERING CORPORATION
FREDERIC R. HARRIS, FREDERICK H. DECHANT
ENGINEERS
Reports ***Designs*** ***Management***
NEW YORK
Atlanta Knoxville Philadelphia San Francisco

HENKELS & McCOY

TRANSMISSION DISTRIBUTION
OVERHEAD UNDERGROUND
CONSTRUCTION MAINTENANCE
BALL FIELD LIGHTING

Electric & Telephone Line Construction Company
CONTRACTORS
PHILADELPHIA
Wilmington, Del. • Portland, Me. • Altoona, Pa.
NOW WORKING IN FOURTEEN STATES

RIGHT OF WAYS
CHEMICAL CONTROL
TREE TRIMMING
GAS AND OIL LINES

HOOSIER ENGINEERING COMPANY

Erectors of Transmission Lines

1384 HOLLY AVENUE • COLUMBUS, OHIO

The Kuljian *Corporation*

ENGINEERS CONSTRUCTORS
1200 N. Broad Street Philadelphia 21, Pa.
St. Petersburg Washington

WILLIAM S. LEFFLER

Engineers Associated
Management Consultants
Cost Analyses for Rate Revisions Regulatory and Municipal Problems
Rate and Sales Research for Increased Operating Income
NOROTON CONNECTICUT

LOEB AND EAMES

Public Utility Engineers and Operators
Ice and Refrigeration
Valuations, investigation reports, design and supervision of construction
57 WILLIAM STREET NEW YORK

(Professional Directory Continued on Next Page)

PROFESSIONAL DIRECTORY (*continued*)

N. A. LOUGEE & COMPANY
(SUCCESSORS TO J. H. MANNING & COMPANY)
REPORTS — APPRAISALS — DEPRECIATION STUDIES
RATE CASES — BUSINESS AND ECONOMIC STUDIES
120 Broadway — New York

CHAS. T. MAIN, INC.
Power Surveys—Investigations—Valuations—Reports
Steam, Hydro Electric and Diesel Plants
Boston 10, Mass. - - - Washington, D. C.

Pioneer Service & Engineering Co.
CONSULTING, DESIGNING AND OPERATING ENGINEERS PURCHASING
SPECIALISTS IN ACCOUNTING, FINANCING, RATES, INSURANCE AND DEPRECIATION
231 SOUTH LA SALLE STREET — CHICAGO 4, ILLINOIS

SANDERSON & PORTER
ENGINEERS AND CONSTRUCTORS
S&P

Sargent & Lundy
ENGINEERS
Steam and Electric Plants
Utilities—Industrials
Studies—Reports—Design—Supervision
Chicago 3, Ill.

The J. G. WHITE ENGINEERING CORPORATION
Design—Construction—Reports—Appraisals
Consulting Engineering
80 BROAD STREET — NEW YORK 4, N. Y.

PROFESSIONAL DIRECTORY (concluded)

ALBRIGHT & FRIEL, INC.
FRANCIS S. FRIEL
Consulting Engineers
Water, Sewage and Industrial Waste Problems
Airfields, Refuse Incinerators, Industrial Buildings
City Planning, Reports, Valuations, Laboratory
121 SOUTH BROAD STREET PHILADELPHIA 7

LUCAS & LUICK
ENGINEERS
DESIGN, CONSTRUCTION SUPERVISION, OPERATION, MANAGEMENT, APPRAISALS, INVESTIGATIONS, REPORTS, RATES
231 S. LaSalle St., Chicago

BLACK & VEATCH
CONSULTING ENGINEERS
Appraisals, investigations and reports, design and supervision of construction of Public Utility Properties
4706 BROADWAY KANSAS CITY, MO.

A. S. Schulman Electric Co.
Contractors
Transmission Lines—Underground Distribution — Power Station — Industrial — Commercial Installations
537 South Dearborn St. Chicago

EARL L. CARTER
Consulting Engineer
REGISTERED IN INDIANA, NEW YORK, OHIO, PENNSYLVANIA, WEST VIRGINIA, KENTUCKY
Public Utility Valuations, Reports and Original Cost Studies.
910 *Electric Building* *Indianapolis, Ind.*

SLOAN, COOK & LOWE
CONSULTING ENGINEERS
120 SOUTH LA SALLE STREET
CHICAGO
Appraisals — Reports
Operating — Financial — Plant

W. C. GILMAN & COMPANY
Consulting Engineers
Load and Capacity Studies — Rate Cases
Financial Planning
Investigations — Reports — Supervision
55 Liberty Street New York 5

UNITED STATES TESTING COMPANY, INC.
HOBOKEN, NEW JERSEY
Analyses - Testing - Inspection - Research
A Complete Service
Boston - Chicago - Los Angeles - New York
Philadelphia - Wonsocket

JACKSON & MORELAND
ENGINEERS AND CONSULTANTS
DESIGN AND SUPERVISION OF CONSTRUCTION
REPORTS—EXAMINATIONS—APPRAISALS
MACHINE DESIGN—TECHNICAL PUBLICATIONS
BOSTON NEW YORK

WESTCOTT & MAPES
Incorporated
ARCHITECTS *ENGINEERS*
VALUATIONS — STUDIES — REPORTS — DESIGN — SUPERVISION
UTILITIES — INDUSTRIAL PLANTS
INSTITUTIONS — SCHOOLS — PUBLIC WORKS
NEW HAVEN CONNECTICUT

JENSEN, BOWEN & FARRELL
Engineers
Ann Arbor, Michigan
Appraisals - Investigations - Reports
in connection with
rate inquiries, depreciation, fixed capital reclassification, original cost, security issues.

Representation in this Professional Directory may be obtained at very reasonable rates. Kindly address inquiries to:
ADVERTISING DEPARTMENT
Public Utilities Fortnightly
309 Munsey Building
Washington 4, D. C.

INDEX TO ADVERTISERS

[*The Fortnightly lists below the advertisers in this issue for ready reference. Their products and services cover a wide range of utility needs.*]

A

Albright & Friel, Inc., Engineers 35
American Appraisal Company, The 32

B

*Babcock & Wilcox Company, The .....
Barber Gas Burner Company, The.. Inside Front Cover
*Barber-Greene Company .....
*Bituminous Coal Institute .....
Black & Veatch, Consulting Engineers 35
Blyth & Co., Inc. 11

C

*Cambridge Tile Mfg. Co., The .....
Carter, Earl L., Consulting Engineer 35
Cleveland Trencher Co., The.. ..Outside Back Cover
*Cochrane Corporation .....
*Combustion Engineering—Superheater, Inc. .....

D

Day & Zimmermann, Inc., Engineers 32
Delta-Star Electric Company 4
Dodge Division of Chrysler Corp. 31

E

Ebasco Services, Incorporated 26
Electric Storage Battery Company, The 17
Electrical Testing Laboratories, Inc. 32

F

*First Boston Corporation, The .....
Ford, Bacon & Davis, Inc., Engineers 32
*Formica Company, The .....

G

General Electric Company 28
Georgeson & Company 18
GMC Truck and Coach Division 20
Gilbert Associates, Inc., Engineers 32
Gilman, W. C., & Company, Engineers 35
Grinnell Company, Inc. 23
*Gruendler Crusher & Pulverizer Co., The .....

H

Harris, Frederic R., Inc., Engineers 33
Henkels & McCoy, Contractors 33
*Hotpoint, Inc. .....
Hoosier Engineering Company 33

I

International Business Machines Corporation 5
International Harvester Company, Inc. 19
Irving Trust Company 7

J

Jackson & Moreland, Engineers .....
Jensen, Bowen & Farrell, Engineers .....

K

Kaiser Aluminum & Chemical Corp. .....
King, Dudley F. .....
*Kinnear Manufacturing Company, The .....
Kuljian Corporation, The Engineers .....

L

*Leece-Neville Company, The .....
Leffler, William S., Engineers .....
*Lehman Brothers .....
Loeb and Eames, Engineers .....
Lougee, N. A., & Company .....
Lucas & Luick, Engineers .....

M

Main, Chas. T., Inc., Engineers .....
Mercoid Corporation, The .....

N

New York Society of Security Analysts, Inc. .....
Newport News Shipbuilding & Dry Dock Co. .....

P

Pandick Press, Inc. .....
Penn-Union Electric Corporation .....
Pioneer Service & Engineering Company .....

R

Recording & Statistical Corp. .....
Remington Rand Inc. .....
Robertson, H. H., Company .....Inside Back C

S

Sanderson & Porter, Engineers .....
Sargent & Lundy, Engineers .....
Schulman, A. S., Electric Co., Contractors .....
Sloan, Cook & Lowe, Consulting Engineers .....
*Southern Coal Company, Inc. .....
*Springfield Boiler Company .....
Sunbury Wire Rope Mfg. Company .....

U

*Union Securities Corporation .....
*United States Rubber Company .....
United States Testing Co., Inc. .....

W

Westcott & Mapes, Inc. .....
White, J. G., Engineering Corporation, The .....

Professional Directory 32-35

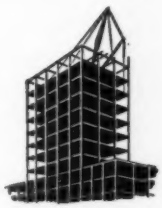
*Fortnightly advertisers not in this issue.

AN ARCHITECT GOT A MONEY-MAN TO ADMIT,

"I never thought of floors in relation to earning power"

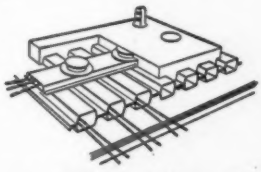
"Floors are such a small fraction of total cost, one tends to forget that floor space is actually what a building is for. You say a steel Q-Floor costs less than the carpet to cover it? Yet it provides electrical availability over the entire exposed area of the floor. And the steel construction, being dry, reduces building time 20 to 30%. These are factors any investor can easily translate into terms of money saved. They mean more revenue over the years and earlier revenue right from the start. Let's look at the details—"

HERE'S WHAT THE ARCHITECT SHOWED



Why Q-Floor reduces building time 20 to 30%.

Q-Floor is steel subfloor, delivered precut. Two men can lay 32 sq. ft. in 30 seconds. Construction is dry, incombustible. The Q-Floor is immediately used as platform by other trades. No delay for wet materials. No forms, no falsework, or fire hazard. Even when steel is slow in delivery, steel is still faster. You must allow time for demolition and excavation. By that time, the steel is ready. Steel construction gives a faster completion date. Completion time, not starting time, determines how soon your investment pays off.



Why Q-Floor keeps a building modern.

The steel cells of Q-Floor are crossed over by headers for carrying the wires of every electrical service, regardless of how many new business machines may be invented. An electrical outlet can be established on every six-inch area. It requires but a small hole, takes literally only a few minutes. No muss with trenches. Tenants can have as many outlets, changed as often and located exactly, as they please. Such permanently flexible floor plans keep a building permanently modern. The exterior may grow old-fashioned, but with live arteries of power in the floors, the building itself will never be electrically outmoded.

Write for the simple facts—

H. H. ROBERTSON COMPANY

2424 Farmers Bank Building, Pittsburgh 22, Pennsylvania

Factories in Ambridge, Pa., Hamilton, Ont., Ellesmereport, England

Offices in 50 Principal Cities — World-Wide Building Service

This page is reserved under the **MSA PLAN** *(Manufacturers Service Agreement)*

MAKES MONEY FOR YOU ON THE TRENCH[illegible] JOBS—TOUGH OR [illegible]

CLEVELANDS sureness of top performance under the toughest conditions enable you to meet or beat your trench[illegible] schedules and get a fast, profitable pace for all the following crews. Correct full-circle swivel-type design—sturdy all-welded quality construction from the toughest steels assuring strength to stand the hardest strains—correct, safe, fast speed for every working condition—simple speed-changing correctly applied power—ease and ease of maneuvering on the job—fast speed mobility are some of the many CLEVELAND characteristics that have given them, among the Utilities, an enviable standard for Dependable, Economical Service. For specifications see your nearest CLEVELAND distributor or write direct

THE CLEVELAND TRENCHER CO.

Sale page is reproduced under the [illegible] PLAN of Manufacturers Service [illegible]